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UNDER A TROPICAL SUN

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BY

ALEXANDER S. KENNY, M.R.C.S.E.,

SENIOR DEMONSTRATOR OF ANATOMY AT KING'S COLLEGE, LONDON.

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ON DUTY UNDER A TROPICAL SUN.

BEING

SOME PRACTICAL SUGGESTIONS

FOR THE

*MAINTENANCE OF HEALTH AND BODILY COMFORT
AND THE TREATMENT OF SIMPLE DISEASES ;*

WITH REMARKS

ON CLOTHING AND EQUIPMENT

FOR

*THE GUIDANCE OF TRAVELLERS
IN TROPICAL COUNTRIES.*

BY

MAJOR S. LEIGH HUNT,

MADRAS ARMY,

AND

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SENIOR DEMONSTRATOR OF ANATOMY AT KING'S COLLEGE, LONDON,
AUTHOR OF "THE TISSUES AND THEIR STRUCTURE."

SECOND EDITION.

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P R E F A C E
TO
THE SECOND EDITION.

WE have to thank the Press, generally, for their friendly criticisms of this small work, and, in editing the present edition, we have given due consideration to the suggestions of our reviewers.

The haste with which the book was originally brought out, has necessitated a very careful revision of the letter-press, which has been further supplemented by remarks on *fractures and dislocations, burns and scalds, restoration after drowning, poisoned arrow wounds, treatment in hospitals, and native servants*; while important additions have been made to the chapters on diet, and clothing and equipment.

December 16th, 1882.

P R E F A C E
TO
THE FIRST EDITION.

THE suggestions in the following pages are offered with a view to assisting those whose duties may necessitate a temporary residence in the East, but who, from lack of previous experience, may not be aware of the simple means of counteracting and palliating many of the petty annoyances and personal discomforts which are attendant upon residence in tropical climates. The compilers have limited themselves to suggestions which have arisen solely in their personal experience in Egypt, India, Burmah, Australia, and elsewhere, and they have every reason to believe that they will be found practically useful.

September 5th, 1882.

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ON DUTY
UNDER A TROPICAL SUN.

CHAPTER I.

GENERAL REMARKS ON TROPICAL CLIMATES.

On any expedition leaving this country, the general arrangements by "Heads of Departments" are so admirable, that the following suggestions might, at first sight, appear to be uncalled for and unnecessary, especially by those whose position and opportunities enable them to profit by the precautions taken for the general welfare of the troops and others in Government employ. Nevertheless, although such arrangements for the general good are so

comprehensive, there are, yet, many petty difficulties inseparable from daily life in the tropics, affecting personal comfort and health, which must be left to the individual to provide against. It is hoped, therefore, that the following "wrinkles" will be accepted as purely supplementary to the many excellent rules and provisions existing for the guidance of those who may be called upon to take part in any such expedition in tropical regions.

It is difficult, for one who dwells in a temperate climate, to obtain any very clear conception of what work and residence in the tropics really means. To him, the passage from a temperate into a torrid zone, is associated with the idea of a sudden accession of heat; but heat and cold are merely relative terms, and it is quite possible to suffer from cold in a hot climate. As a rule, however, it is not so much the actual temperature which affects the individual, as the local physical peculiarities of the particular country, or portion of country, in which he may, for a time, be compelled to reside. A temperature, for instance, of 100° Fahrenheit,

37° F. = 90° C.

when the air is dry, is very much less trying to the human organism, than is a very much lower temperature when the air is loaded with moisture. The explanation of this is to be found in the fact, that, while hot dry air favours the process of evaporation, which, when the temperature is high, should ever be taking place from the surface of the healthy skin, and, so, tends to lower the temperature of the body, air which contains much moisture, is antagonistic to this process, and, thus, greatly interferes with this important function by which the temperature of the organism is regulated. The amount of moisture present in the atmosphere varies, not only in different tropical countries, but, also, in different parts of the same country. In India, for instance, the basin of the Ganges, in Hindustan, is exceedingly humid, while that of the Indus, is, usually, parched and dry. On the other hand, in Southern India, the humidity of the Malabar coast is remarkable as compared with that of the Coromandel coast. The climate of Scinde, in the northern part of the presidency of

Bombay, is dry and sultry, and the rainfall is slight. In the Punjaub, the amount of rain that falls is also slight, and the climate is hot and dry. The Punjab is, besides, interesting as illustrating the remarkable extremes of temperature sometimes met with in tropical climates. In winter, the cold is great, the temperature varying from 34° to 75° ; whereas, in the summer, the heat is sultry even to oppressiveness. In Egypt, the climate is exceedingly hot, but the temperature is regular, and the atmosphere dry and clear; at night-time, there are heavy dews, and a cold wind sweeps over the sandy plains, often producing sudden chills. For nine months of the year, there is a cool wind from the north, which tends to diminish the intense heat, but, at the same time, keeps the air impregnated with small particles of sand, which add greatly to the discomfort of those who may not have adopted any special means to protect the skin, as far as possible, from its irritating effects. The Australian climate is generally dry, and, for the most part, healthy, and, although the heat is often great, there are

many periods of the year when no special form of protection for the head is required, and there does not seem to be that general dread of sunstroke and heat-apoplexy which always exists in India. In Polynesia, the temperature of the islands is in most cases moderate, owing to the prevailing sea-breezes, but the amount of humidity varies greatly, and this is especially the case in the Melanesian group of Islands. In these, in addition to the heavy rains, which not unfrequently occur, there are often heavy night-dews, and, after sun-down, a cool wind sets in, when the change in temperature is sometimes so great, as to render a camp-fire very acceptable. The greater part of China lies within a temperate zone, but, at Hong Kong, the temperature is liable to great variations at different periods of the year. During the months of June and July, the thermometer frequently stands at 90° , while, from December to March, it descends almost to freezing point. At Shanghai, the changes are still greater, reaching a maximum of 100° , and falling to 20° below freezing point. Those who contemplate

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(3) 1 2 3

a prolonged residence in these parts, must bear in mind such temperature changes, and provide themselves with appropriate clothing. In Burmah, the annual rainfall is very great, and anyone whose duty may call him there, must be provided with the means of protecting himself, as far as possible, from the effects of the extreme humidity of the climate.

This brief glance at the chief climatic features of some of the more important countries which lie within the tropics, will suffice to show that all hot climates are not alike, and that it is necessary, in every case, to take into consideration the special local characteristics of the country which is to be visited. We have been induced to lay special stress on this point, as many residents in particular parts of the tropics, judging only from their personal experiences, are apt to lay down rules and regulations suited to meet the requirements suggested solely by such individual experience, without taking into account the varying changes of tropical climate noted above.

At first sight, it might seem an almost hope-

less task for anyone to preserve his health, under conditions so various and trying as those we have depicted. Happily, however, the frame of man is so constructed and arranged, as to be able to withstand even great extremes of heat and cold. If a man will only take care to adapt his clothing, diet, and mode of life to the special circumstances under which he may be placed, he will be able not only to tolerate, but to enjoy life in the tropical climates of the world.

CHAPTER II.

ON THE DISEASES OF TROPICAL COUNTRIES.

Sunstroke, its varieties and treatment—Affections of the Scalp, Ear, Eye, Nose, and Lips—Toothache—Peeling from Sun-burn—Prickly Heat—Burmese Ringworm—Eczema—Herpes—The Nails—Corns and Bunions—Blisters—Moist Feet—Ingrowing Toenail—Tender Feet—Cramp—Inflammation—Boils—Egyptian Blind Boil—Whitlow—The Tongue—Sore Throat—Diphtheria—Diarrhœa—Dysentery—Cholera—Constipation—Hæmorrhoids—Flatulence—Acidity—Heart-burn—Biliousness—Fever, Simple, Intermittent, and Remittent—Rheumatism—General Debility—Orchitis, or Inflammation of the Testicle—Snake-bite—Scorpion-bite—Prickly-pear Thorn-wounds—Wounds from Poisoned Arrows—Mosquitoes—Moths—Burns and Scalds—Wounds—Bleeding from a Wound—Fractured Collar-bone, Broken Rib, Fractured Fore-arm, Broken Leg, Broken Ankle—Dislocated Shoulder, Elbow, &c.—Bruises and Sprains—Crushed Finger—Bathing—Disinfectant Fluid—Carbolic Acid—Water Dressing—Iodine—Lint—Emetics—Freezing Mixtures—Useful Medicines—Comparative Scale of Weights, &c.—Restoration after Drowning—Hospitals.

THE diseases which affect dwellers in tropical countries, are as varied as the changes of

climate we have been discussing. Some of them are of great virulence and severity, many of them are peculiar to certain localised districts, while others, again, are but exaggerated forms of simple maladies which affect those who dwell in temperate zones. These last, indeed, are ailments which are simple enough in themselves, but which tend to interfere with the health, and disturb the comfort, of those who suffer from them, and which, if left to themselves, often lay the foundation of really serious diseases, or develop into permanent local affections of a most trying and tiresome nature. It is impossible for us, in a work of this kind, to do more than allude very briefly, to those more serious general diseases which are special to tropical climates. Our object, is simply to supply the traveller in hot countries with a little domestic medicine for his own use, and to indicate the means he should adopt to keep his body in a healthy state. It is by no means our intention to foster a false sense of security, by leading anyone to think that it is possible for him to dispense with proper

medical assistance when these ills befall him; on the contrary, we would especially impress on everyone the imperative duty of availing themselves, when possible, of the skill and experience of medical men, who, being acquainted with the special local peculiarities of the climate, are better able to appreciate the severity, and understand the symptoms, of each particular case. These hints are intended, rather, for the guidance of those who occupy a more isolated position, and who may be, temporarily, placed beyond the possible means of obtaining medical aid.

SUNSTROKE.—In considering the effects of heat on the human system, it is possible to speak only very generally on the subject; for, just as in our own climate, we have frequent illustrations of the varied degrees of discomfort, or even suffering, which extremes of cold may inflict on different individuals, so, also, in the tropics, it has frequently been noted, that one man can perform work of even the most laborious nature, and generally endure an amount of exposure, which would prove rapidly fatal to another. Some men, on entering the tropics, at

once become the subjects of disease, while others, experience nothing more than the ordinary discomforts consequent upon such a thorough change of climate. Now-a-days, there is but little opportunity for a man to become accustomed by degrees to these changes; the facilities for getting from one country to another, are so numerous, and the rapidity of travelling is so great, that in very few cases does anyone enter the tropics gradually, and the transition, by slow stages, from one climate to another, which was the characteristic of travelling in former days, no longer exists; and, though this delay was tiresome in itself, there is but little doubt, that it was beneficial to the health of the individual. Although, from the above remarks, it will be foreseen that it is impossible to lay down any hard and fast rules calculated to meet each individual case, it will, nevertheless, be obviously advisable for everyone to adopt the suggestions, and provide himself with the outfit set forth in the following pages, until he has had means of testing for himself, his powers of withstanding the effects of tropical climates.

One of the most common, and yet, at the same time, most serious affections which afflict those who are exposed to the sun's rays, or the high temperature of the tropics, is the condition commonly known as "sunstroke." This name, together with the term "heat apoplexy," and many others, has been used in a general sense, and, undoubtedly, includes very many conditions which differ pathologically in themselves, but which, as they in many instances possess a somewhat similar train of symptoms, and result in a series of affections which are, to the general observer, the same, have, thus, come to be classed under the one general head. In some instances, though the symptoms may appear to be very serious, the case is one of simple syncope, or exhaustion, brought on, as a rule, by fatigue and over-exertion in an individual whose health and bodily powers are, at the time, in a depressed state, by exposure to the direct rays of the sun, or to a high temperature within doors, in over-crowded or ill-ventilated houses or tents. In cases of this kind, the skin is generally pallid, and, at the

same time, moist and clammy. The pulse is sometimes so feeble, as to be scarcely perceptible, and there is great nervous prostration combined with an almost total temporary loss of muscular power. Under appropriate treatment, recovery usually takes place, except in very severe cases, when death occurs from the failure of the heart's action.

Treatment.—Remove the patient into the shade, or, when practicable, in cases where it has occurred indoors, to a cooler place. Take off all tight or superfluous and oppressive clothing. A cold-water douche should be applied to the head and along the chest and spine, but it must not be too long persisted in. The patient should, if possible, be roused, and the surface of the body gently stimulated. The bowels should be made to act, but not too violently, by castor oil given internally, or by purgative enemata or injections. Injections of warm soap and water, or gruel, can be used, and to these, turpentine or castor oil may be added. To produce the desired effect, a sufficient amount of fluid must be used, often as

much as two, three, or four pints is required, the enema, in many instances, failing in its object, on account of its not being copious enough. The patient should be placed on his *left* side, and the enema slowly pumped into the rectum. An enema syringe is an article which everyone, who is likely to be out of the reach of medical assistance, should take with him.

Besides these cases of simple syncope, there are others which partake, to a certain extent, of the nature of shock, and are due to the direct rays of a powerful sun on the brain and spinal cord. This is a much more serious type of case. The great nerve centres of respiration and circulation are affected, and death may take place in a very short space of time; and, though in many cases the patient survives, the recovery is seldom complete. The symptoms in this type, are distinguished from those of the former one, by the suddenness of their onset. The patient loses consciousness, the skin is cold and moist, and the pulse feeble. The patient, sinking rapidly, may die from shock, or a febrile reaction may set in.

Treatment.—The patient should be at once removed into the shade, the clothing removed from his body, and a cold-water douche be applied to his head and body from a distance of three or four feet. After the douche, mustard-plaisters should be applied to the chest, abdomen, and calves of the legs. Mustard-leaves will be found most useful for this purpose, and should always be included in the list of “medical necessities.” Enemata may be used in the manner described above.

Another very serious form of sunstroke, is that due to a general over-heating of all the tissues of the body, including the blood, which results, not so much from the direct sun's rays, as, from exposure to a constantly high temperature. This leads us to draw attention to the fact, that the precautions against sunstroke must be always persisted in, as it is not only on bright, sunny days, but on cloudy ones also, and even at night-time, that this form, which is more especially known as *heat apoplexy*, may occur. The symptoms of this severe form, differ from those already de-

scribed in many important particulars. The temperature of the body rises rapidly, even as high as 108° – 110° ⁽¹⁾; the skin is hot, sometimes moist, but more frequently dry; the pulse is sometimes full, at others quick and jerky; the vessels of the head and neck are dilated, and their pulsation can be readily observed; the countenance is livid and congested; there is intense restlessness, and the patient experiences great difficulty in breathing; convulsions which resemble those that occur in epilepsy, often take place, and in some cases, death is produced by hæmorrhage on the brain. If the patient lives, there is permanent impairment of health.

Treatment.—As in these cases there is often some *photophobia*, or dread of light, the patient should be kept in a darkened room, rendered as cool as possible, and cold, applied by means of the cold-water douche, or ice when it can be procured. The head should be shaved; and the application of cold by the irrigation method will be found very beneficial. This consists, in suspending a small pot, or *chattie*, over the

(1) 42° – 112° — 5.

patient's head, and filling it with ice and water (or, when ice is not to be obtained, a small quantity of vinegar added to the water will render it more refreshing); strips of lint or linen are placed in the vessel, and allowed to hang over the side, so that they conduct a constant stream of water to the patient's head. Quinine, in doses of five to ten grains,⁽¹⁾ or more, may be given internally, with the view of reducing the temperature. In every case where cold is applied, care must be taken not to persist in it too long, or continued depression of the temperature of the body may be produced. The object sought by the application of cold, is the reduction of the abnormally high temperature, and, when this has been accomplished, there is no further need to persist in its continuous use.

Everyone should possess a small pocket thermometer, by placing which in the patient's arm-pit, his temperature may be ascertained. The normal temperature of the body averages about 98.5° Fah.⁽²⁾

Diet.—The diet, throughout, should be very light and nutritious, consisting chiefly of milk,

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sago, arrowroot, &c. It often happens, however, that the patient is so circumstanced that he cannot obtain these things, and it then becomes a question what he is to take. It is at such a time as this, that the Swiss milk, in tins, will be found of almost priceless value. Eggs can generally be obtained, and an egg beaten up in tea, will often be found acceptable. In most places, chickens can be procured, and some chicken broth will assist the patient in regaining his strength. "Brand's essence of beef," or "Liebig's extract," will be most useful, and should always find a place in a man's store of provisions. By slicing a few onions and frying them till they are well browned, and then pouring some Liebig's extract, previously dissolved in boiling water, over them, straining, and adding a pinch of salt, a dish of most palatable soup may be obtained.

Before concluding these remarks on the management of those who suffer from sun-stroke, a word of warning must be given on the subject of stimulants. The cases in which they will be of use are very few, and it is best

that their administration should not be resorted to, unless by those who have had great experience of these cases, or under the direction of a medical man. The patient's return to consciousness may be quickened by holding some ammonia a little distance from his nostrils. When ice is procurable, the patient may drink iced water, or be allowed to suck ice. Cold tea with a dash of lime-juice, or "toast-and-water," is very refreshing, and can always be procured.

General Remarks.—After suffering from the milder forms of sunstroke, the patient should take care not to expose himself to fatigue, or to the influence of the sun, until he has thoroughly regained his strength; and, after all the more severe forms, he should be removed, as soon as possible, to a cooler climate.

The Avoidance of Sunstroke.—Much may be done to prevent the occurrence of this serious and, as we have pointed out, often fatal disease. Never go out without sufficient protection to the head, neck, and spine, the means of providing which will be discussed in

our chapter on clothing. (See pp. 144–146, 149, 154.) Take care that all clothing and equipments fit as easily and lightly as practicable, so as to interfere as little as possible with the movements of the muscles of respiration. Never go out on an empty stomach ; always take a cup of tea and a biscuit in the morning before starting ; never undertake any heavy work in the sun immediately after a full meal, but, rather, defer the meal till afterwards. When exposed to the direct rays of a powerful sun, a few green leaves placed in the hat, or even wetting the hair with a little water, may do much to protect you from the intense heat. Never allow the bowels to become constipated, and endeavour in every way, to promote a healthy and free action of the skin. Dry-skinned people are much more liable to suffer from sunstroke than those who perspire freely, and they should, therefore, take special precautions.

There can be but little doubt, that the entrance of hot air by the ear is very injurious. Anyone who has noticed the natives of the East when they are travelling, will have

observed, that it is a common custom for them to swathe the mouth and ears in many folds of cloth, as a protection against the hot wind, in the same way that the Russian attempts to exclude the cold. Acting on this principle, many old residents in hot countries, when they are exposed to the scorching influence of the hot winds, that blow periodically, are in the habit of protecting the ears with a handkerchief tied round the head, to prevent the entrance of hot air and particles of sand and dust into the interior of the ear. With a view of doing away with the inconvenience of thus bandaging the head, we have suggested the use of a form of ear protector, which may be attached to the goggles. This can be procured from Messrs. Weiss and Son, who also have the sale of the "Ochiomba," a special form of goggle, in which the metal is reduced to a minimum.

AFFECTIONS OF THE HEAD.

SCALP.—Thorough cleanliness is very essential, as parasites abound in tropical climates. Everyone should possess a pair of good

brushes, and use them frequently, as scurf is apt to accumulate very rapidly.

Parasites may best be removed, by anointing the part with weak mercurial ointment; or a very effectual application, is a lotion composed of one drachm of Solution of Bichloride of Mercury, to an ounce of dilute acetic acid.

EAR.—In some countries, especially in those which are dry and sandy, a troublesome soreness or ulceration of the interior of the external ear is of common occurrence. Carefully washing every part of the organ, and protecting it from the wind loaded with particles of sand and dust, will be found the chief safeguard against this affection. When sore places have already formed, a small piece of lint, dipped in water to which a little Condyl's fluid or a small quantity of carbolic acid (one in forty) has been added, with a piece of oil-silk outside it, should be applied. Ear-ache is a common affection, and has often been noticed as a prelude to a fit of *epistaxis*, or bleeding from the nose. A little sweet oil, or glycerine, warmed, and dropped into the ear, or a plug of

cotton wool soaked in spirit, with a few drops of laudanum sprinkled on it, will often afford relief.

THE EYES.—The delicate mucous membrane which covers the under surface of the eye-lids, and is reflected in a much more delicate layer on to the front part of the eye-ball, is extremely sensitive, and, often, a very slight irritation will cause it to become red and inflamed. Associated with this state, there is a burning, smarting sensation, and, sometimes, a certain amount of discharge. This condition is known as ophthalmia, and is brought about, in many instances, by the irritating influence of hot or keen winds, which often bring with them fine particles of dust or sand; this, while occurring frequently in many parts of India, is more especially the case in Egypt, where the air is almost always impregnated with such fine particles. The glare produced by the sun, often brings on an attack of this complaint, or it may be induced by the entrance of some foreign body into the eye.

Treatment.—(1) The *preventive* treatment, consists in the use of goggles provided with

glass of a bluish tint, and well closed in at the sides to exclude the dust or sand. Goggles, as ordinarily made with metal framework and gauze, frequently become too hot to be worn with comfort, so that they are often discarded, the glare or dust being considered a less evil than the heat thus concentrated about the eye. To meet this defect, we have recommended the adoption of some material which shall be a *non-conductor* of heat, such as hardened corallite or celluloid, and the substitution of cotton gauze or crape, for wire gauze. Besides this mechanical way of guarding against ophthalmia, another means, is that of frequently bathing the eyes, and it is well to get into the habit of opening them widely in the water when washing, as this washes out foreign particles, and relieves the smarting, which may exist even when ophthalmia is not present.

(2.) The curative treatment, consists mainly in the use of soothing or mild astringent lotions. Among these may be mentioned alum, eight grains to the ounce of water, or a solution of two grains of sulphate of zinc with twenty

drops of laudanum to the ounce. In some cases, a dilute solution (half to two grains) of the chloride of zinc will be found more useful. Dilute solutions of nitrate of silver (two grains to the ounce), sulphate of copper, or Goulard water (the latter very cooling) will all be found serviceable. When unable to obtain these, we have found a lotion of spirits of wine or brandy, one part in thirty or forty, very useful. It is an excellent plan for those whose eyes are weak, or who are placed in countries where ophthalmia is prevalent, to wash out the eyes once every day with a weak spirit lotion.

It will often happen, that at night-time the eye-lids will become stuck together by the discharge, giving rise to great discomfort during sleep, and sometimes great pain in opening them on waking. This may be prevented, by smearing the free margins of the eye-lids, before going to sleep, with any simple ointment of a non-irritant character. After an attack of ophthalmia, the membrane lining the inner surface of the eye-lids frequently remains thickened, and little irregular elevations are seen on its

surface, and these, by pressing on the eye-ball, are a constant source of irritation, and may produce a most serious form of inflammation of the transparent parts of the eye. Everyone should possess a stick of a material known as "Lapis Divinus," a mixture of equal parts of nitre, alum, and sulphate of copper, which is readily procurable; and when this condition arises, he should draw it across the inner surface of the eye-lid once or twice every day, until the mucous membrane has returned to its normal state. This treatment, refers to the simpler forms of ophthalmia. There are other forms which are very rapid in their course, and violent in their action, the treatment for which is very urgent, and ought not to be adopted without medical assistance. In all cases, however, the simpler remedies we have mentioned, should be resorted to till such assistance is obtained, and if the case is one of the purulent kind, where the pain is great, the inflammation violent, and the discharge profuse, associated with swelling of the eye-lids, care should be taken, supposing only one eye is affected, to at once protect the

sound eye, which may be easily done by anyone who happens to possess a glass covering to his watch ; the glass is, in most cases, easily removed from the watch ; a narrow strip of oiled silk, or water-proof material, is wrapped round the edge of the glass, and this is covered by a piece of adhesive plaister. The glass is now placed over the sound eye, and the purulent material from the affected eye is prevented from entering it. The advantage of this method is, that while it affords ample protection, if the oiled silk and plaister are carefully adjusted, it does not obstruct the vision. When a watch-glass cannot be obtained, the sound eye must be protected by a pad and bandage, but this causes much discomfort.

Mode of using Eye-Lotions.—A small soft brush, or bit of sponge, may be dipped into the fluid, and a little taken up and dropped into the inner corner of the eye ; the eye-lids will close spasmodically, but the patient should try to open them slightly, so as to allow the lotion to pass between them and moisten every part of the eye. Or the lotion may be applied by means of an eye-glass ; this is made so as

to fit the margin of the orbit, and, at the same time keep the eye-lids open. The glass is held firmly against the eye-lids, and the head is then thrown back, or from side to side, until every part of the eye has been washed by the solution.

THE NOSE.—Small ulcerations often occur just within the nostrils, due to the accumulation of dust or sand, which, becoming caked, when removed, leaves a sore place. We have found that the habit of throwing, or drawing the water well up into the nostrils, during washing, is a great preventive. When such soreness occurs, it may be treated by any one of the mild lotions mentioned above. *Epistaxis*, or bleeding from the nose, often takes place, especially in people of full habit. It generally ceases after a time, having done only good, and it should not, therefore, be too hastily checked. Head-ache and ear-ache, in many cases, precede such an attack, and when the bleeding has ceased, it is generally found that they have passed off.

Treatment.—When it is desired to check the bleeding, this may be done by injecting a solution of alum into the nose, or by stuffing up powdered

alum. Cold should be applied to the back of the head and spine by means of water, or ice if procurable. Ipecacuanha (fifteen to twenty grains), given internally, sometimes in doses sufficient to produce vomiting, has been found serviceable. A simple method, is to place the patient on his back, and stretch the arms above the head.

THE LIPS.—A parched, dry state of the lips, and sometimes chaps or fissures, are not uncommon. A little simple ointment, or glycerine, or a touch with nitrate of silver, or the alum and sulphate of copper stick, will be found the most appropriate treatment.

TOOTH-ACHE.—An attack is often brought on by some disturbance of the stomach, or derangement of the digestion; a dose of some purgative medicine frequently sends it away. When it is due to a decayed tooth, and a cavity exists, the air should be excluded from the tooth by stuffing it with a piece of lint teased out, or some absorbent cotton soaked in laudanum, spirits of camphor, or brandy. When swelling occurs, it may be relieved by warm fomentations. A little quinine should be taken for a

time after an attack. The teeth should be carefully inspected and attended to, before starting on a journey to the tropics.

PEELING OF SKIN FROM SUNBURN.—The skin of the face and nose often becomes very painful from exposure to the scorching sun, and is apt to peel. The white of an egg, beaten up in about two ounces of milk, with the addition of three or four ounces of water, applied freely to the surface of the skin, will relieve the smarting. A lotion composed of two drachms of biborate of soda (*i.e.* borax), an ounce of rectified spirit, half a drachm of camphor, and eight ounces of water, will be found a most soothing application to the skin of the face and neck generally, and a cooling and pleasant wash for the scalp, especially in cases where there is much scurf.

AFFECTIONS OF THE SKIN GENERALLY.

The skin is one of the most important organs of the human body. It acts as a physical protection to the deeper and more delicate structures, and, as its most superficial part is composed of cells,

which are impervious, and non-absorbent, it protects the organism from the entrance of many poisonous and noxious materials, which we should, otherwise, be in constant danger of absorbing. In it, are spread out delicate nerve terminals, and it is the seat of the special sense of touch. It is an organ of excretion as well as secretion, being beset with vast numbers of little glands, which open in thousands on its surface. The blood supply of the skin is exceedingly plentiful, and it is one of the most important organs concerned in the regulation of the temperature of the body. Under the influence of warmth, the little vessels of the skin dilate, and the blood flows freely through it, and its temperature is reduced; at the same time, a greater or less amount of moisture is given off from the surface. When cold strikes the body, the vessels contract, and less blood flows through the skin, so that the temperature of the body is not lowered. The special advantage of the skin, as a regulator, is that it is a self-regulator, less blood flowing through it when we require to be kept warm, and more,

when it is necessary that the temperature of the blood should be reduced. All this goes on, in many cases, without even our knowledge, and, at all times, without the exercise of our will. Under normal conditions, a certain amount of moisture is always being poured forth on the surface of the skin; this is known by the term *insensible perspiration*, because it goes on unobserved, and its existence is little dreamt of by the ordinary individual; its cessation, however, though it be but temporary, is a source of great discomfort, and results in the unpleasant condition known as a *dry skin*, which exists, to a greater or less degree, in all febrile states. From this brief outline of its functions, the immense importance of keeping the skin in a healthy state, will be apparent to even the most casual observer. Thorough cleanliness, and carefully washing or sponging the surface of the skin, are the chief means by which it may be kept in working order.

PRICKLY HEAT.—This is one of the most common skin affections met with in the tropics. It is a red, pimply rash, affecting the skin

generally, but more especially those parts where the clothes come more closely in contact with the body, namely, the waist, neck, shoulder-blades, arm-pit, and in the fork between the thighs. It produces intense itching and smarting, and the patient often scratches himself violently, until the soreness becomes so great, that the least touch produces pain.

Treatment.—During the attack, the diet ought to be light, and stimulants must be avoided; the bowels should be relaxed, and the kidneys made to act freely. A mixture of three drachms of acetate of potash, about half a drachm of sweet spirits of nitre, and eight ounces of water, or of decoction of broom, will answer this purpose. Alkaline baths, of from three to ten ounces of bicarbonate of soda, or three ounces of borax, to about twenty or thirty gallons of water, of a temperature of about 95°, a little fuller's earth dusted over the part, or a thin paste of whiting smeared over the surface of the skin, afford relief. The natives of India make use of the whey of curdled milk to allay the irritation. It is a practice with some people to use

violet powder in these cases, but, as a rule, its use should be avoided.

BURMESE RINGWORM.—This is a form of *tenia circinata* ; it begins as a small, scaly patch, which is, at the first, extremely itchy, but afterwards becomes very painful and smarts greatly. The patch gradually undergoes enlargement, the circumference being beset with small vesicles. It frequently occurs in contiguous parts, as in the fork between the thighs, and often spreads to a considerable distance.

Treatment.—In Burmah, “Goa powder” is used with good results ; at first its application produces a good deal of smarting and local inflammation, but it in most cases eradicates the disease. Two drachms of carbolic acid, about half an ounce of glycerine, and four ounces of water, or some tincture of iodine painted over the part, will be serviceable. We have seen the use of sulphur and vinegar followed by excellent results.

ECZEMA is an inflammation of the skin. The part affected at first itches a good deal, and after a little while, a papular eruption makes

its appearance; these papules, after lasting for a week or two, may gradually disappear, and the skin over them peel off or desquamate. In some cases, the papules are vesicular (contain fluid) from the outset; after a time they burst, and the inspissated discharge forms a scab. In other cases there is a free formation of pus.

Treatment.—When painful and inflamed, rest, water-dressing, or Goulard water. In the more chronic cases, zinc ointment or a lotion of two grains of sulphate of zinc to an ounce of water, may be used. Sponging the part with milk and white of egg beaten up will be of service. The diet must be light, and alcoholic drinks should be avoided. The condition of the bowels and kidneys must be attended to.

HERPES, is an eruption of small vesicles clustered together. At first, a localized patch of redness is observed, and there is a stinging, tingling sensation in the part; a number of papules make their appearance over the red area; after a short time, these become vesicular,

reaching their full size in about twenty-four hours. In two or three days, they begin to dry up gradually, leaving a thin scab which drops off after a little while.

Treatment.—Simple ointment, or cooling lotions, together with saline medicines and tonics.

NAILS.—In hot climates, the *nails* are apt to become very brittle and break off; they should be kept closely pared.

THE FEET.

CORNS AND BUNIONS.—These sources of discomfort, are as common to the tropics, as to other climates, and a brief notice of them will be found useful in a work of this kind, intended, as it is, for the use of those whose duties render the condition of the feet a matter of the greatest importance.

Treatment.—Care must be taken to have boots that fit thoroughly well, as corns are as often produced by a boot that is over loose, as by one that is too tight. Soaking the feet in warm soap-and-water; water-dressing; rasping

the surface of the corn, when a hard one, with any rough material, such as the *shark's-skin corn files*, which can now be so generally obtained; a piece of belladonna plaister, or some of Mather's corn plaisters; or touching the surface of the corn with acetic acid or iodine,—will all be found to afford relief.

SOFT CORNS, which are so much more painful, may be relieved by any of the above methods, with the exception of rasping; and, in addition, some of Lawton's absorbent cotton, with a little oxide of zinc or some fuller's earth dusted on it, placed between the toes, by absorbing the moisture, and preventing the toes rubbing against each other, will afford comfort. Instead of this, some absorbent cotton or lint, soaked in sweet oil, may be placed over the corn.

BUNION is caused by the undue pressure of the boot upon the prominent parts of the feet. To remove the cause, the boots should be temporarily discarded for another pair.

Treatment.—Frequent warm fomentation, until all inflammation has subsided. Apply iodine. In some cases, both corns and bunions

suppurate, and leave an ulcerated surface discharging more or less freely; in such a case, the parts must be dressed with carbolic lotion, one in forty, or with a weak solution of Condyl's fluid, or the ordinary water-dressing.

FISSURES or cracks of the skin between the toes, often cause great pain or uneasiness. They should be treated by careful washing, carbolic-acid lotion, Condyl, or water-dressing; and the fissured surface should be touched with the sulphate of copper and alum stick, or with nitrate of silver.

BLISTERS.—Well-fitting socks and boots are the best preventive. When blisters have formed, if small, puncture them and let out the fluid; if large, don't puncture, but protect them with a layer of absorbent cotton, till the skin beneath has time to form. When they have been opened, or have burst of themselves, dress them with carbolic lotion or some simple ointment.

MOIST FEET.—In some cases, the perspiration from the skin of the feet is excessive, and often causes intense discomfort, by the very unpleasant odour it produces.

Treatment.—Sponge the feet with water acidulated with acetic acid or lime-juice. Belladonna liniment, applied two or three times a day, often reduces the perspiration to a minimum. Dr. Ringer suggests the use of lead in the form of emplastrum plumbi, with an equal part of linseed oil, to be spread on linen and wrapped round the feet ; the application to be renewed every third day for nine days.

INGROWING TOE-NAIL.—This painful affection, is only one of the many evil results of wearing boots with pointed toes. The pressure of the boot, causes the flesh of the toe to overlap the edge of the nail, and ulceration takes place underneath it, on either side ; often, a quantity of proud flesh springs up around the nail, and walking, or even standing, causes great pain. The nail of the great toe is the one most generally affected.

Treatment.—The preventive means, consists in wearing roomy, square-toed boots, and in taking care to round off the corners of the nails, when paring them. When, however, the condition known as *ingrowing* toe nail, has once been set up, the toes should be separated by pieces of lint

placed between them, and, the edge of the nail being slightly raised, a small bit of lint, or absorbent cotton, should be placed beneath it, to prevent it from pressing on the raw surface. Should any difficulty be experienced in raising the edge of the nail, a small notch, made about the centre of its free edge, will enable you to raise it readily. When the flesh sprouts up around the nail, much relief will be experienced, by touching such outgrowths, daily, with a bit of nitrate of silver, or bluestone. In all cases, however, medical assistance should be sought as soon as possible, as, in many cases, the only certain cure, rests in the removal of the nail.

TENDER FEET.—Bathing the feet in alum, or salt and water will harden them. Soaping the stockings, and greasing the boots, which latter renders them both soft and waterproof, will be found to add to comfort. (See "The Soldier's Pocket Book," by General Lord Wolseley, G.C.B., G.C.M.G.) When the feet are in a very tender state, you will find it add greatly to comfort in walking, if you wear a pair of silk socks under your ordinary socks.

CRAMP.—This affection of the muscles of the lower extremities, is often a source of great annoyance. It frequently comes on after great muscular exertion, and, at other times, is associated with a rheumatic or gouty state. When due to exertion, the application of cold or weak spirit lotion, followed by vigorous shampooing with a rough towel, affords relief. In the chronic rheumatic state, where the cramp comes on, especially at night, Dr. Ringer has found the administration of the tincture of actæa, in five-drop doses every hour, or in doses of fifteen to thirty drops three times a day, of great service, in relieving the pain and procuring a quiet natural sleep. This tincture, is made by macerating about four ounces of the bruised root of the *actæa racemosa*, in a pint of proof spirit, allowing to stand for about fourteen days, and then straining.

INFLAMMATION.

The first symptom of inflammation is *pain*. The patient feels a throbbing, burning, or

aching pain, according to the tissue which is affected; the part then begins to feel hot, it becomes red, and swelling takes place. By adopting a proper line of treatment directly any symptoms of inflammation make their appearance, you will often succeed in cutting short an inflammatory attack, and prevent the occurrence of some local affection, such as a boil, which would otherwise cause you much annoyance. When any of the symptoms of inflammation appear, a good dose of purgative medicine should be taken, and warm fomentations, cooling lotions, or an evaporating lotion (page 43) may be applied. A few words may be said, as to the relative value of cold and warm applications in local inflammations. When the inflammation is very acute, and, especially, if a joint is acutely inflamed, it is safer to employ warm fomentations; when, also, the parts are greatly swollen, and the skin is very tense, warmth, *by relaxing the parts, and relieving the tension of the skin,* will be found to afford more relief than cold.

Lastly, you should always remember, that there are many people who cannot bear the

application of cold at all well, and, when you find that cold does not allay the pain, and relieve the patient's suffering, you should, without hesitation, try what warmth will do.

BOILS.—On first entering the tropics, few escape an attack of this troublesome complaint. Many people suffer from crops of boils, which come out on almost any part of the body. They are especially liable to appear on the neck, or any part where the clothes may produce local irritation. General debility, an over-heated state of the blood, change of climate, and errors of diet, are among the chief predisposing causes. When a boil is in its early stage, the administration of a brisk purgative, and the local application of cold, in the form of lead lotion, ice, or an evaporating lotion composed of one or two drachms of hydrochlorate of ammonia, an ounce of rectified spirit, and six ounces of water, will often cause it to undergo "resolution" and disappear. If debility exists, a simple tonic of two grains of sulphate of quinine, and five drops of dilute sulphuric acid, with a little syrup of orange, to the ounce of water, of which, two

table-spoonfuls are to be taken twice or three times a day, will do much to restore tone to the system. Or, instead of taking it in this way, an excellent tonic may be made, by dissolving twenty grains of quinine in as many drops of dilute sulphuric acid, and adding it to a bottle of port, sherry, or ginger wine. A wine-glass of this may be taken twice or three times a day. When the boil has become painful, it should be frequently bathed with water as hot as can be borne. Poultices are sometimes used, but they tend to the production of other boils. The application of a drachm or two of the extract of belladonna to an ounce of glycerine, at this time, will relieve the pain and tension. If matter forms, and the skin over the boil becomes thin, and it points in a definite direction, much pain and trouble will be spared, by opening it freely, always at the most dependent or lowest part, so as to allow of free drainage. The application of a little resin ointment, or carbolic-acid lotion, will soon cause it to heal. Small doses of sulphide of calcium, given very frequently, often prevent the formation of other boils, and

hasten the subsidence of those already present.

Blind boils are of very common occurrence in hot countries, and we have found the blind boil of Egypt a most painful and troublesome affection; indeed, we had ourselves a painful crop of them, when on special staff duty in the Commissariat department, in that country in 1868, during the Abyssinian expedition. If blind boils be painted over with nitrate of silver, collodion, or strong carbolic acid, their further progress will, in most cases, be checked. The practice of pricking and squeezing them, which so many adopt, only does harm, and ought to be avoided.

Paronychia.
WHITLOW.—This affection arises, in many cases, from a punctured or poisoned wound; in others, it is the result of general weakness and debility. In Burmah, owing to the depressing and debilitating effects of the damp climate, this painful complaint is very common. It usually appears, as a deep-seated swelling about the middle of the finger.

There are three varieties, which, mentioned

in the order of least importance, are as follows:—

1. That placed immediately beneath the superficial layer of the skin. This, is a simple form, and a poultice, with slight incision into the skin, and the application of a little simple pressing, will produce a speedy cure.

2. In the second form, the whitlow is beneath the skin; this produces much more pain, and requires poulticing, and an early, free incision down the middle of the finger, on its palmar aspect.

3. The pus permeates the sheath of the tendons which move the finger, and may produce death of a part of the bone. This, is the most serious form, and is attended with intense throbbing pain, and the patient cannot obtain sleep. Poulticing, and early free incision down to the bone, must be resorted to.

The internal treatment in all these cases, consists in the use of tonics, care also being taken that the bowels act regularly. The hand should be kept in a sling, or bandaged across the chest to the opposite shoulder.

AFFECTIONS OF MOUTH AND THROAT.

THE TONGUE is often the seat of fissures, or cracks, and little inflamed patches, which are very irritable, and a source of great annoyance. The mucous membrane of the mouth, too, is commonly affected by little superficial ulcers, or sores, generally known by the term *apthæ*. Both these conditions are due, in many cases, to a disordered digestion, or to a sluggish condition of the bowels.

Treatment.—The general treatment consists in establishing a regular action of the bowels, and correcting any disturbance of the digestive organs which may exist. The local treatment consists in a gargle of chlorate of potash, 1 drachm to two ounces of water, or in the use of chlorate of potash lozenges. The inflamed spots, may also be touched lightly with nitrate of silver. The tincture of myrrh, tannin, or perchloride of iron, one drachm of either to the ounce of glycerine, painted over the tongue, forms an especially useful application when the fissures have existed for some time.

SORE THROAT.—This condition, when of a temporary nature, may be relieved by the adoption of very simple measures. Mild gargles of salt-and-water, alum, spirits of wine in the proportion of one part of the spirit to four or five of water, or port wine, very frequently used, or a cold compress to the neck, will, in most cases, prove effectual. Many people, however, suffer from a relaxed state of the throat; in such cases, the most trivial changes of temperature, or even the slightest amount of exposure, may bring on an attack of acute sore throat associated with increased congestion of the parts, and much discomfort in swallowing; after a time, the attack passes off, leaving the throat in the same relaxed and, more or less, painful state it was before. These cases require something more than the simple applications we have mentioned above. A gargle of chlorate of potash, in the proportion of two drachms with an ounce of honey, to about eight ounces of water, combined with the internal use of a mixture composed of half a drachm of dilute sulphuric acid, one drachm of chlorate

of potash, a drachm of spirits of chloroform, and six ounces of decoction of cinchona, of which two table-spoonfuls must be taken twice a day, will do good in this form of sore throat. Or, instead of this, you may use a gargle of one drachm of the tincture of capsicum to about half a pint of water; or, an application composed of one drachm of tannin, or two drachms of the tincture of the perchloride of iron, to an ounce of glycerine, may be painted freely over the tonsils with a camel's hair brush. Acute inflammation of the tonsils, is generally known by the sudden manifestation of great pain, a rapid rise of temperature, enlargement of the tonsils, and loss of voice. Constant gargling with warm milk, the application of warm fomentations externally round the neck (a piece of *spongiopiline* dipped in hot water may be used for this purpose), the administration of a saline purge, or the use of small doses of calomel or grey powder, and a Dover's powder, given at night-time, are the measures which will afford the most speedy relief. When the acute attack has subsided, any of the applications noted above

may be used. After an attack of this kind, a tonic should be given. In relaxed throat, one of Cooper's chlorate of potash, or eucalyptus effervescing lozenges, placed in the mouth from time to time, and allowed to dissolve slowly, will be found most beneficial.

DIPHTHERIA.—In certain parts of India, owing, probably, to the unsanitary surroundings of many of the native villages, rather than to any climatic influence, diphtheria is very common. In such districts, therefore, especially when you hear of isolated cases occurring, should you be troubled with any affection of the throat, you must obtain medical assistance as soon as possible.

DIARRHŒA.—This complaint, so common to the tropics, is brought on by the introduction into the alimentary canal of irritating materials, such as unripe or over-ripe fruit, insufficiently cooked vegetables, or impure water. Or an attack may be induced by intemperate habits, or sudden changes of temperature. It is undoubtedly due to malaria in many instances, while in others, it is the precursor of more

serious diseases, as dysentery, cholera, or typhoid fever.

Treatment.—Simple diarrhœa may, in many instances, be cured by a change of diet, and, in cases where it is due to the consumption of injurious substances, a mild purge of one or two table-spoonfuls of castor-oil, with fifteen or twenty drops of laudanum, should be given. The patient ought to rest as much as possible, and his body, especially the stomach, should be kept warm, and the feet dry. The adoption of a milk diet, the milk being diluted with one-third of lime-water, will be found most beneficial. Farinaceous foods are useful in some cases, but there are many they do not suit. Beef-tea, Liebig's extract, or chicken-broth, will help to keep up the patient's strength. We have noticed several instances in which the use of beef-tea, and different kinds of broth, distinctly increased the amount of diarrhœa; in these cases, the patient always derived more benefit from a milk diet, or, when that could not be adopted, from the use of more solid food, given frequently, but in very small quantities. When

there is much griping, five-grain doses of Dover's powder will relieve it. In cases which are of malarial origin, quinine and acid should be given internally. We have found the use of a solution, obtained by boiling the husk of the green cocoa-nut for about half-an-hour in water, and then straining, act most beneficially in checking obstinate diarrhœa; a wineglassful must be taken two or three times a day. The boiled milk of the cocoa-nut, also, has the same effect. Dr. Horton recommends the use of the following mixture. Three drachms of the tincture of catechu, six drachms of spirits of chloroform, twelve ounces of the liquid extract of bael-fruit, and six ounces of infusion of matico. Two table-spoonfuls to be taken three or four times a day. Chlorodyne is an invaluable remedy in these cases. In all cases where cholera is about, diarrhœa must be checked at once. Many people entering the tropics, for the first time, do not recognise the importance of this affection, but, relying on the strength of their constitutions, neglect it, and the result is, that, in most instances, they are

permanently incapacitated, and have to return home.

DYSENTERY.—An attack of dysentery is, sometimes, preceded by fits of shivering associated with a slight rise of temperature; but, in most cases, it begins with diarrhœa, and, it can only be distinguished from simple diarrhœa, by the difficulty with which the bowels act, and the passage of mucus and blood.

Treatment.—Rest in the recumbent posture, hot fomentations over the abdomen, twenty to thirty grains of ipecacuanha given at once. After four hours, the same quantity may be given again, especially if the first dose was rapidly vomited; ten or fifteen grains of Dover's powder may be given at night-time. The diet should consist of milk and broth, but not too much of either at first. When possible, medical aid should at once be obtained.

CHOLERA.—It is impossible to say, with any certainty, how long the incubation stage of cholera lasts, but it varies, probably, from a few hours to three or four days. As variable as the incubation period, are the symptoms which usher

in the attack. In very many instances, a general feeling of *malaise*, associated with lowness of spirits, noises in the ears, and a relaxed state of the bowels resembling ordinary diarrhœa, precedes the onset of the disease. The first distinctive feature in the attack, is the sudden passage of an abundant loose stool, followed speedily by an almost continuous flow of fluid, which is, at first, stained with the bile, but, afterwards, becomes clear and colourless, and is without fœcal appearance or smell; after a short period vomiting sets in; the patient now becomes attacked with severe cramps, which affect the muscles of the abdominal wall, as also those of the upper and lower extremities, causing the most intense pain, and he soon falls into a state of extreme collapse. There is a rapid fall of temperature, the body becomes cold and clammy, the pulse is quick, and scarcely perceptible, the respirations rapid and shallow, and there is a total suppression of the urinary and biliary secretions. Death occurs usually in this stage, but a reactive stage sometimes sets in, which results either in the recovery of

the patient, or in death from engorgement of the lungs, consolidation, or many other causes.

Treatment.—Precautionary measures are of the first importance. Be careful to boil and filter all water, and, if possible, do not obtain it from any place where it is liable to be contaminated with fæcal matter. Thorough cleanliness of person and surroundings is essential. In times when cholera is present, immediately disinfect all evacuations and contaminated articles with Condy's fluid, or carbolic acid. Check, at once, any attack of diarrhœa that may arise, avoid the frequent use of purgative medicines, especially salines; frequent as little as possible the crowded parts of native towns, take a cup of hot coffee before going out in the morning, well air the bed-clothing every day, and take care that changes of such clothing are thoroughly dry before use. Be very careful in your diet, and do not allow yourself to take large quantities of alcohol, as so many do, thinking thus to ward it off. Always use a cholera belt and a light blanket at night. We were once acquainted with an old Indian colonel

who used to say to those going to India “keep your head cool and your belly warm”; and this advice, the outcome of his experience, was most excellent. Above all, in times of cholera, do not give way to panic. Adopt in your own person and surroundings the suggestions put forth for your guidance by the medical authorities, which are generally admirable, and you may fairly calculate upon witnessing an epidemic of cholera with absolute confidence as to its result as regards yourself.

When the diarrhœa appears to be coming on, give from fifteen to thirty drops of chlorodyne, and this may be repeated in three or four hours. Keep the patient in the horizontal posture, apply hot flannels or mustard poultices to the abdomen; let the patient suck ice or iced water, brandy, or champagne; rubbing the limbs will relieve cramp. The patient's courage should be kept up, and medical assistance obtained as soon as possible. When the reactionary stage sets in, the patient must be kept cool, the diarrhœa and vomiting checked, and the diet should be non-stimulating, light,

and nutritious. This brief outline of diarrhœa, dysentery, and cholera is all that can be attempted in a work of this kind. For further information, the reader is referred to the many excellent books which exist on this subject.

CONSTIPATION.—Turning from the discussion of some of the most serious diseases which affect the traveller in the tropics, we must now allude to the abnormal state known as constipation, which might seem, to those who do not give it sufficient thought, a very trivial matter. It is not, however, the serious diseases, which by their violence and fatality command attention, men are apt to neglect, but it is the slight affections and trivial complaints, met with in our daily round, that receive such wholly insufficient notice ; and, yet, these are often the abiding source of irritation, discomfort, and annoyance, in some instances, rendering the body increasingly susceptible to many of the more dangerous maladies, and in others, laying the foundation of many very formidable chronic complaints. While strongly discountenancing the practice so many have, especially

in the tropics, of constantly taking purgative medicines, with the idea of cooling the blood, we seriously advise everyone to adopt the many simple means he has at his command, to keep the bowels in a healthy state, and ensure their constant and regular action.

Treatment.—One of the chief means of correcting constipation, is the acquirement of a regular habit. It matters little at what hour of the day the action of the bowels may take place, but everyone should try and get into regular habits in this respect. Many people take too little fluid, and a glass of water, taken the first thing in the morning, will often have a marked effect. In the tropics, however, this practice is open to some objection; but the cup of tea or coffee, which we have suggested should be taken before going out in the morning, will have the same result. Oatmeal porridge or brown bread should be taken, as they have a marked effect in promoting the action of the bowels. One or two dried figs steeped in sweet oil over-night, and taken the first thing in the morning, have been found by

us to be a most excellent remedy. Fruit generally, is very serviceable ; but the precautions with regard to its use, which we have mentioned above, must not be lost sight of. Prunes or French plums, when obtainable, soaked in water for a few hours, and then stewed with a little sugar, form a most excellent laxative. Enemata of warm water, or warm soap and water, used as directed above, may be resorted to in more chronic cases, but if they are used frequently, the coats of the bowels are weakened, and their use cannot then be dispensed with. Kneading the abdomen with the hands, may be mentioned, as being a simple mechanical method of producing increased action of the bowels. In spite of the adoption of these means, it will, of course, often be necessary to resort to the use of some mild purgative medicine. Granulated sulphate of magnesia, a small dose of castor oil, a little Epsom salts, sucking one of Cooper's effervescing aperient lozenges, a grain of ipecacuanha taken, fasting, every day, one or two drops of the tincture of nux vomica in water, two or three times a day, the use of Cockle's

pills, or the ordinary rhubarb or colocynth pills—any of these will generally be found to produce the desired effect.

HÆMORRHOIDS OR PILES.—These depend upon congestion of the mucous membrane of the lower bowel, and a varicose or twisted condition of the veins, which results in the formation of little tumours filled with congealed blood. There are two kinds of piles, the *external*, which are placed immediately outside, and the *internal*, placed within the lower bowel. These latter, are often composed of small arteries, as well as veins, and are liable to be the source of much bleeding when the bowels act. Piles are, in many instances, produced by constipation, and, in others, by an engorged state of the liver. Attention to the regular action of the bowels, and to the condition of the liver, are the chief preventive means we have. The symptoms are generally those of irritation about the part, straining, and often the passage of blood, and pain in the lower part of the back. Sometimes, the pile becomes congested and swollen, when the pain is very

intense. When piles have once made their appearance, the treatment consists in paying great attention to the action of the bowels; and their regular action may be ensured, by the adoption of any of the simple medicines mentioned in speaking of constipation; or the use of equal parts of confection of senna and confection of sulphur, a teaspoonful or two to be taken the first thing every morning, will be found most useful as a gentle laxative. The local applications, consist of alum lotion, bromide of potash (one part to five of glycerine), calomel ointment, or, in the more painful cases, where the piles are swollen and congested, the ointment of galls and opium will afford great relief. In cases where the piles appear to be attended with a general congested state of the liver, three or five grains of calomel with a grain of opium, should be given, followed by a saline purgative the next day. In all cases, medical aid should be obtained as soon as possible.

FLATULENCE.—This condition, which often produces much inconvenience, may be relieved

by a brisk calomel purge, or by an emetic of warm water or ipecacuanha, followed by a purge. A little sal volatile, or five-drop doses of dilute sulphuric acid in water, or Carlsbad water when it can be obtained, are remedies which will be of service. The amount of sugar and starchy food, as potatoes, bread, rice, &c., also tea, should be curtailed.

HEARTBURN AND ACIDITY.—These may both be much relieved by the use of dilute nitric or hydrochloric acids in five-drop doses in water, taken before or after meals.

THE LIVER, SPLEEN, AND KIDNEYS.

These organs are all liable to many serious affections, which it is impossible for us to discuss in these pages. In many cases, however, there may be some slight derangement of the liver, attended with a feeling of uneasiness over the right side, a dull aching or, sometimes, even an acute pain between the shoulder-blades, distension of the stomach and bowels, a general feeling of nausea, together with loss of appetite, drowsiness, and disinclination to undertake

active bodily or mental work. The tongue also may be foul, the face sallow, the eyes slightly tinged with bile, and headache may be present. In such cases, a calomel purge, followed by salines and a sparing diet, will be found beneficial. When these attacks are of frequent occurrence, much good will be derived by the use of the following pill:—A quarter of a grain of podophyllum, two grains of extract of taraxacum, and a quarter of a grain of extract of hyoscyamus. When one of these attacks comes on, two of these pills should be taken at night, followed, in the morning, by a dose of granulated sulphate of magnesia, or some Lamplough's pyretic saline. If the symptoms still continue, one pill may be taken every other night for a week or two.

GIDDINESS is often one of the symptoms in a bilious attack such as we have just been describing, or it may be due to some simple disturbance of the digestive organs. An over-distended state of the stomach, flatulence, and indigestion, may often produce palpitations and

shortness of breath. Any of the simple means we have more than once alluded to, for the relief of a disordered state of the stomach, will prove effectual when these complaints are due to such causes. In these remarks on the disorders of the digestive tract, we have had, in some instances, to inculcate a very sparing diet, and in others, an almost total temporary abstinence from food. The reason of this will be very apparent, if we call to mind how delicate are the digestive organs. When an individual receives a wound, or any injury to his limbs, it does not take him long to discover that, if he would restore the member to its normal state, he must keep it at rest. The work the limbs have to perform is mechanical work, and when they have sustained any serious injury they require mechanical rest. The organs of digestion have to execute highly complex physiological work, upon which the health, nay, the very existence of the organism, depends, and when they become temporarily disordered and incapacitated, it is only right to suppose, that they will be benefited by physiological rest.

and this may be obtained by curtailing the amount and modifying the nature of the food we take.

FEVER.

It is almost impossible to pay a visit, of even limited duration, to many parts of the tropics, without experiencing in our persons, or witnessing in that of others, one or other of the varieties of fever which are so common to these countries. It has fallen to our lot, to observe in the Melanesian islands some very severe types of this disease. The three chief varieties of fever are—(1) simple fever, (2) intermittent fever, and (3) remittent fever.

(1) SIMPLE FEVER.—This usually comes on with head-ache, muscular pains, general loss of appetite, and a feeling of weakness and *malaise*. The causes which produce it are probably very simple: changes of temperature, the effect of a hot climate on a constitution not accustomed to it, or it may be, malaria, being among the conditions which bring it about.

Treatment.—If possible, stay at home ; let your diet be light, take plenty of cooling.

drinks; ten grains of Dover's powder during the hot stage, a little quinine afterwards, and sometimes a mild purge, will probably be all that is required.

(2) INTERMITTENT FEVER.—This form of fever is due to malaria. It is impossible for us to enter into any discussion here as to the nature of malaria. It will suffice to say that a soil saturated with moisture, heat, decaying vegetable matter, and certain physical peculiarities of country, are the conditions which seem to favour the development of the malarial influence, whatever the true nature of that influence may be. An attack of intermittent fever, is usually preceded by a general feeling of lassitude, and the subject of the attack, may have expressed himself as having been generally “out of sorts” for two or three days. Suddenly, a sensation of chilliness comes over him, and he complains of weariness, headache, and muscular pains; presently, the patient begins to shiver—the shivering sensation starts in the back, and is communicated to the rest of the body; the fits of shivering now

give place to distinct rigors, the teeth chatter violently, and there are convulsive tremblings of the whole body. During this stage, which is known as the "*cold stage*," the temperature rises rapidly. After a period, the length of which is liable to great variations, the sense of chilliness lessens, there is diminished force and frequency of the rigors, and the patient begins to feel warm; this relief is, however, only temporary, for he has to pass through another series of trying symptoms; the feeling of heat is now intense, the skin becomes hot and dry, the respirations rapid, and the thirst almost intolerable. This, which is known as the "*hot stage*," may last from one to eight or ten hours. At last, the sense of heat gradually lessens, and the skin becomes bathed in a profuse perspiration; this is known as the "*sweating stage*." This fever is properly called "intermittent," as it comes on in paroxysms, the periodicity of which is remarkable. The length of the intervals between the paroxysms, has led to the division of intermittent fever into several forms; when twenty-four hours interval exists, it is called

“*quotidian ague*”; when forty-eight hours, “*tertian ague*”; and when the paroxysms take place every third day, “*quartan ague*.”

(3) REMITTENT FEVER.—In this fever, the paroxysms occur, sometimes, twice a day; but, during the intervals, there is no marked fall of temperature, and, when the paroxysms come on, there is a further elevation of the already existing high temperature.

Treatment.—During the cold stage, the patient will obtain much relief from the application of warmth applied by warm bottles to the feet, or even by the use of a hot bath. During the hot stage, cooling drinks may be given, and a dose of Dover’s powder. After the hot stage has passed, quinine, in doses of five to ten grains, should be given every four hours; when the full effect of the drug, as indicated by deafness and noise in the ears, is observed, the frequency of the doses may be lessened; but, as a rule, it is well to take a dose a short time before a paroxysm is expected, as it may prevent it altogether. The preventive measures against ague are these:

—All drinking water must be boiled; always sleep off the ground; when possible, avoid going out at night-time or in the extremely early morning; during the time you are in a specially malarious district, small doses of quinine may be taken every day with advantage. The efficient draining of malarious districts, and clearing away some of the dense underwood and vegetation, is probably the only real safeguard against ague, and the numerous other complaints due to malaria.

AFFECTIONS OF THE LUNGS, RHEUMATISM, ETC.

When, after exposure to cold or wet, muscular pains come on, associated with chills, rigors, and a high temperature; when the skin becomes hot and dry, the tongue foul, the bowels constipated, the urine scanty and high coloured, and the stomach disordered; or when difficulty of breathing is experienced, with acute pains over the region of the lungs, and these symptoms do not yield to any of the simple means of treatment we have recommended above, you should adopt a sparing

diet, guard yourself carefully against cold, and take immediate steps to get within reach of medical aid as speedily as possible.

GENERAL DEBILITY.—From prolonged exertion in a climate which is naturally enervating, or, it may be, simply from the climatic influence itself, a man often falls into a state of weakness and languor, which, if it does not absolutely incapacitate him, certainly makes him disinclined for active work, and renders his life more or less a burden to him. This feeling of lassitude is, more especially, felt in the morning; when he has plunged into the work of the day, it passes off, or, at least, is not so much noticed, but it returns again in a greater degree each succeeding day; still, he cannot afford to rest, there are duties which must be undertaken, however ill he may feel, the non-performance of which, might be attended with even serious disaster. Such a man feels the want of something more than the ordinary tonic, something, which, if taken early, shall give him an appetite for his morning meal and a general “fillip” for the day. We have seen several instances

in which this debility has existed in a remarkable degree, and, in these cases, the use of "Brand's beef lozenges," or "Burrough's beef and iron wine" was followed by the most marked effect. The latter preparation contains beef-juice and citrate of iron in solution in wine, and is a powerful and rapidly acting tonic. A tablespoonful should be taken in water in the morning, or between meals. As a general tonic in these cases, the simple quinine mixture we have recommended above, or the following mixture, will be found suitable:—Two drachms of citrate of iron and quinine, three drachms of tincture of nuxvomica, half an ounce of spirits of chloroform, and eight ounces of infusion of calumba, or water; a tablespoonful should be taken three times a day. Many cases of general debility are rendered worse, or, in some cases, set up, by derangement of the digestive organs, or errors in diet, and everyone should pay attention to these particulars.

ORCHITIS, OR INFLAMMATION OF THE TESTICLE.

—This condition may be brought about by a blow, or, in some instances, from over-exertion

in the saddle. As people in hot climates are very liable to this affection, a few remarks on the subject will be serviceable. There is acute pain in the testis, it becomes congested, swollen, hard, and tense; the pain extends up into the groin, backwards into the lower part of the spinal region, and then downwards into the thighs. There is, in most cases, a rise of temperature and a feeling of nausea; sometimes violent vomiting takes place. The tongue is foul, the skin dry, and the urine scanty.

Treatment.—Rest in bed, warm fomentations to the affected part, a dose of Dover's powder, and a saline purgative will probably be all that is required. The affected organs must be supported by a pillow, or a very good plan is to place a piece of cardboard with an elliptical piece cut out, across the thighs so as to afford support. The object of cutting a piece out of the cardboard, is to allow it to fit well up underneath the scrotum. In severe cases, where the pain is intense and the tension great, half-a-dozen leeches, applied over the affected organ,

will afford marvellous and instantaneous relief. It is well for everyone in tropical climates who has much riding to do, to wear a suspender.

SNAKE-BITE.—The symptoms brought on by a bite from a poisonous snake, will vary with the amount of poison introduced into the system. The general symptoms produced, are those of profound nervous prostration, there is a feeble and intermittent pulse, vomiting, great rapidity of respiration, the speech becomes indistinct, the pupils dilate; finally, the patient becomes unconscious, convulsions come on, and death soon takes place; the part bitten becomes swollen and livid, and diffuse inflammation of the surrounding tissues sets in.

Treatment.—Supposing that a limb has been bitten, at once place a cord round it a few inches above the wound, and, passing a stick between the limb and the cord, twist it round several times, till the utmost degree of tension is produced. Two or three other ligatures should be applied above the first, a few inches intervening between each. The wound must now be freely incised, and every part of it

touched with a hot iron, or some strong carbolic or nitric acid may be applied ; give fifteen drops of liquor ammoniæ in water, and continue the administration every quarter of an hour for two or three hours, or equal parts of hot brandy-and-water or any other spirit may be given. If no symptoms appear in half-an-hour, relax the ligatures ; if symptoms have appeared, the ligature must be kept in position until the patient has recovered, or, until there is no danger of the poison spreading from the affected part. The practice of making a man walk about, with the view of rousing him, should not be followed. When the wound is not on a part of the body that can be ligatured, it must be incised, and a part of the skin and subcutaneous tissue taken away all round, the hot iron or acid being applied as in the former case (Fayrer). In Australia, Professor Halford has found great benefit result from the injection into the veins of twenty to thirty drops of the strong liquor ammoniæ, diluted with three or four times its bulk of water, and, in that country, many lives seem

to have been saved by the adoption of this treatment. We have the great authority of Sir Joseph Fayrer for stating, that this treatment is of no avail in India.

SCORPION-BITE.—The sting of a scorpion produces a sharp, burning pain, and the part swells, becomes hard, white, and tense.

Treatment.—Apply, at once, a little strong liquor ammoniæ, which will relieve the pain; then put on a cold poultice.

PRICKLY-PEAR THORN WOUNDS often cause a great amount of local pain and irritation, which is best relieved by warm fomentation and poulticing. Should the pain be increased by pressure, it is a sign that a portion of the thorn remains in the wound, which should be lanced, and hot poultices applied.

WOUNDS FROM POISONED ARROWS.—Owing to the advance of civilisation, and the adoption by native races of European weapons, wounds from poisoned arrows, or spears, are much less frequently met with than they were formerly. In the South Sea Islands, and among the Dyaks of Borneo, the Andamanese, and certain of the

hill tribes of India, however, even in these days, such wounds are occasionally inflicted. A few remarks, therefore, on their treatment, will not be out of place.

Apart from the question as to whether any poison exists or not, the wound made by an arrow is of such a nature as to require very careful treatment. The wound is what is technically called a "punctured wound"; that is, it occupies a small area, but penetrates deeply into the soft parts. Such punctured wounds are, in the tropics, especially liable to be followed by "lock-jaw" (tetanus). In the Melanesian Islands, however, there can be no doubt that the natives dip the arrow points in some very irritative and virulent poison, so that, in addition to the danger which arises from the nature of the wound, the patient is exposed to the very *real* danger of absorption of the poison by the blood-vessels. The patient's body is thrown into violent convulsions, in which all the muscles participate, and death, as a rule, ensues from exhaustion. We have seen a case, in which the patient died within thirty hours of the receipt of the wound.

Treatment.—When a limb is wounded, two or three ligatures should be at once applied above the wound, in the way we have described in writing of snake bite. The wound must then be enlarged by a free incision, and the parts freely seared with a hot iron, or some strong carbolic or nitric acid applied. The ligatures may be kept on for one or two hours, or until the swelling produced by them seems to threaten destruction of the limb by stoppage of the circulation. The patient's bowels should be opened freely by a strong purge. If he is suffering from great depression, you may give him a few doses of liq. ammoniæ (5 to 10 drops) in water, in the earlier stages of the case. If muscular spasm comes on, give the patient a dose of chloral (30 grs. in water), and repeat the chloral in small doses (10 grs.) every two or three hours, until the patient begins to show symptoms of drowsiness, when you had better stop its administration for a time. In the meantime, great attention must be paid to the condition of the wound—free incisions should be made to allow of the escape of any matter, and hot poultices may be

applied. The patient seldom loses consciousness till the end is near, and every effort should be made to cheer him, and to lead him to suppose that his condition is not, necessarily, a serious one; and, indeed, we may do this with perfect honesty, as there are many cases of recovery after wounds from poisoned arrows. We have every reason for thinking, that unless the poison has been recently applied, it loses much of its virtue. Our practical experience of this subject is, however, confined to the Melanesian Islands.

MOSQUITOES.—The application to the skin of a weak solution of ammonia, affords great relief in bites from mosquitoes; Goulard water will also be found very soothing. The best preventive means, is always to use mosquito-curtains. An apartment may be cleared of mosquitoes, by closing the windows and doors, and then discharging a small quantity of powder—the concussion kills them, and they will be seen lying about in hundreds; or they may be got rid of by fumigation. Keating's insect powder will be found very serviceable for this purpose.

MOTHS.—Moths are often a source of great

trouble in hot countries; a lump of camphor should be taken in your portmanteau with a view of keeping them off, and the clothes should be frequently inspected, to see that they have not suffered from damp, or from the inroads of these troublesome insects.

BURNS AND SCALDS.—In burns and scalds, three degrees of severity may be distinguished. The simplest, are attended only with redness of the skin, or *erythema* ; the next in severity, are those in which *vesication* occurs, the superficial part of the skin being raised up into blisters; while the most severe forms, are attended with *destruction* of the deeper tissues, the whole thickness of the skin, the muscles, vessels, or even the bones being destroyed. The simpler varieties of burns usually heal readily under appropriate treatment; but those in which the skin and deeper tissues are destroyed, are, often, very difficult to heal, and, as in these forms, the soft parts have a great tendency to contract, great care must be taken, or serious deformities may be produced. As regards the severity of burns, it should always be borne in mind that a

comparatively superficial burn, or scald, extending over a large surface, is far more dangerous, than is a much more severe burn which only affects a limited area.

Treatment.—The main principle to be kept in view, in the treatment of burns or scalds, is the *exclusion of air* from the affected part. One of the most simple and effective methods of treatment, consists in dredging the part over with flour, care being taken that the flour is equally distributed over the whole of the affected surface; a thin layer of cotton wool, and a bandage, may then be lightly applied. The flour forms a soft and soothing application, and, when vesication has taken place, and the vesicles—or blisters—have broken, it combines with the effused fluid, and forms a solid crust over the raw surface. After a time, the encrusted flour will separate in flakes, leaving, underneath, a raw, but healthy surface, which should then be treated with ordinary cold “water dressing,” or weak carbolic acid lotion (1 in 40). Instead of flour, whitening or pipe-clay, may be mixed with water into a thin, creamy paste, which, applied over the

affected part, dries, and forms a mould, that at once protects the wound, and excludes the air. Another very useful application is "Carron oil"—a mixture of equal parts of solution of lime (liquor calcis), and olive, or linseed oil. This Carron oil, may be applied on strips of lint or cotton wool, or, better still, a quantity of "Lawton's absorbent cotton" may be steeped in it, and applied to the wound. Whatever be the nature of the application you may use, the following cardinal point, in the treatment of burns, must be borne in mind, namely, that the dressing, when once applied, should be left on until it produces discomfort, or becomes offensive from the discharge. The constant renewal of the dressing, by irritating the surface, depressing the patient, and admitting the air, is sure to do harm. When vesicles have formed, if they are small, and tense, they may be punctured; but when they are large, you had better let them alone. In all cases of burns of the third degree, where the deeper textures are destroyed, and in such of the second degree, where the vesication is extensive, and the area affected

large, medical aid should be obtained as soon as possible. In the meantime, however, if such assistance is likely to be long before arriving, any one of the methods of treatment mentioned above should be resorted to. In every case, the part should be set at rest, and, when the deeper structures are involved, and the part affected is a limb, it should be placed upon a splint (see pp. 89, 90); this will have the double effect of facilitating the healing of the wound, and preventing the contraction of the soft parts. When the ulcer left by a burn is healing, exuberant outgrowths of flesh—"granulations"—often occur on its surface; these should be kept down, by gently touching them with nitrate of silver. When the ulcer is irritable, and the parts around swollen, much relief will be experienced by the use of a warm, bread poultice. Lastly, a most useful application for ulcers, which require gentle stimulating, combined with exclusion of air, is a solution of equal parts of balsam of Peru, and olive oil, brushed over the surface with a soft brush night and morning. (Druitt.)

WOUNDS.—All wounds should be washed out

with a solution of carbolic acid (1 in 20), and then brought firmly together by means of silk sutures, or sticking plaster.

BLEEDING FROM A WOUND.—When the wound is severe, the bleeding which takes place will require special treatment. First ascertain if the bleeding is from an artery or a vein. If from an artery, the blood will be of a scarlet hue, and will come out in jets. Pressure above the wound, that is, between the heart and the wound, will stop the flow of blood, and, on removing the pressure, it will at once recur. If the bleeding is from a vein, the blood is of a purple colour, and pressure below the wound, that is, between the wound and the extremity, will stop it. Bleeding from a vein, only requires a little pressure, by means of a pad and bandage; but that from an artery, especially if the artery is of large size, will require the application of direct pressure to the artery above the wound. This may be applied by means of a tourniquet, or, when there is no tourniquet at hand, a twisted handkerchief must be tied round the limb, and a stick placed

between the limb and the handkerchief, and twisted till the vessels are thoroughly compressed, and the bleeding ceases. In cases where the position of the artery is known to the person applying the pressure, more direct pressure of the artery may be obtained, by placing a stone or some other resistant material inside the handkerchief, and then, taking care that it coincides with the position of the artery, tightening the handkerchief in the manner just described. When the bleeding is slight, it may generally be checked by stuffing the wound with lint or shreds of linen, and applying firm pressure by means of a pad and bandage over all. The chief local applications for checking bleeding are cold, perchloride of iron, a solution of chloride of zinc (40 grains to the ounce), a solution of sulphate of copper, matico leaves, and the hot iron. In some parts of the tropics, wounds are very difficult to heal, and this is especially the case in Egypt. Small particles of sand or dust get into the wound, and set up a considerable amount of irritation. The practice of washing out all wounds with carbolic lotion,

and carefully closing them, will, to a great extent, prevent the entrance of such foreign particles.

FRACTURES.—All fractures of bones are classed under two general heads, namely, *simple* and *compound*.

A fracture is said to be a *simple* one, when the skin and soft parts are not wounded or lacerated in such a way, as to admit the external air; whereas, in a *compound* fracture, the seat of the injury is exposed to the air through a wound in the soft parts. Of these two varieties, a compound fracture is by far the more serious, as, being exposed to the influence of the air, it possesses, *per se*, an element of danger which does not exist in the simpler form.

General Symptoms of Fracture.—After a fall, or the receipt of a blow, some *deformity*, such as bending or twisting of the injured bone, may suddenly make its appearance. Such deformity will be more readily observed, if you carefully compare the injured limb with the corresponding sound one; next, on examining the part with the hands, a greater or less amount of *preternatural mobility* will be found to exist; and,

finally, a grating noise, technically known as *crepitus*, will be heard when the broken ends are rubbed together. There are many cases in which all of these symptoms will not be present, and in a few, indeed, they may all be absent. All cases of fracture should be placed under medical care as soon as practicable ; we will, therefore, only note briefly the general principles of the treatment which should be followed until such assistance is obtained.

Treatment.—The main points to be observed in the treatment of a fracture, is, in the first place, to correct the deformity by restoring the broken fragments to their natural position ; and, next, to keep the fragments at perfect rest, and in complete *apposition* until they have become firmly united. In cases where one of the bones of the leg, or the thigh bone, is fractured, to prevent any undue movement of the injured limb, the patient's legs should be tied together, just above the knee, and at the ankle ; and he should be removed on a stretcher to the nearest dwelling where he can be taken in and receive attention.

A stretcher is easily made, by taking a

blanket, sack, or horse-cloth, and stretching it between two poles, or bamboos, about nine feet in length, with a cross piece of wood, or stick about two and a half feet long, spliced across at about eighteen inches from each end of the poles, to keep them apart. If your horse-cloth, or blanket, be sufficiently wide, fold it in half, and stitch the edges of the sides folded over, with stout string, or pack-thread: this will form a bag, open at both ends, into which the poles may be easily inserted, and the cross pieces adjusted.

When the patient has once arrived at his destination, a bed must be prepared for his use, care being taken that the bed is both level and firm. While these preparations are being made, the stretcher containing the patient may be suspended between two chairs placed at each end of the poles, so that the body of the patient do not touch the ground. When the bed is ready, the stretcher should be raised, and placed gently on the bed (across the bed, should there be a foot-board), and the cross pieces and poles removed. The blanket being gently drawn from beneath the patient, the clothing is removed, and the

injured part carefully examined to ascertain the full extent of the injury. A word of warning is here necessary, as to the way in which the clothes should be removed from the injured limb. The patient is frequently caused a great deal of suffering, and much harm is done by the futile, and, often, violent attempts, which are made to draw the clothes off the limb. By ripping up the seam of the clothes on one side, much unnecessary suffering to the patient, and any possible injury to the affected part, will not only be avoided, but, when the patient is sufficiently recovered to sit up, the article of clothing thus treated, can be readily adjusted over the splints and bandages, and held in position by tapes stitched to the sides and fastened in loops. While the necessary splints and bandages are being prepared, the limb should be carefully washed, and the fracture may then be "set," or *reduced*; to do this, one person maintains a firm hold of the upper portion, or fragment, of the broken bone, while another person draws the lower portion gently, but steadily and firmly, in such a direction, as to restore the limb to its

natural length and shape. Should the bone not resume its proper position on the limb being thus drawn out, or extended, a little careful and gentle manipulation with the fingers, at the seat of the injury, will, often, cause the parts of the fractured bone to resume their natural position. The fractured bone having been set, it will not remain so, unless the fragments be kept in position by means of mechanical contrivances in the way of splints and bandages, which have the double effect of keeping the fragments in place, and, to a certain extent, restraining the action of the muscles, and, thereby, preventing any movement of the fractured part.

The splints should never be applied so firmly, as to impede the flow of blood to or from the affected part; and the pressure they exercise should be equable, for, if they press unduly on any one portion of the limb, they will give rise to ulcerations of a very troublesome nature; the splints should, also, be fully as wide, or even a little wider than the limb to which they are applied. All splints must be carefully *padded*; for this purpose, cotton-wool, or tow may be

used ; or, excellent pads may be made of pieces of old blanket, cut into strips wide and long enough to line the splint, a sufficient number being laid on to give the required softness. (Druitt.) The materials used for padding, are to be kept in position, by covering the splint with a piece of old linen, the edges of which are to be turned in, and stitched together at the back of the splint.

In applying a splint, you must bear in mind, that it must be sufficiently long to embrace, and fix, the two joints connected with the injured bone; if the thigh be fractured, the splint must include the hip and knee joints; if the leg, it ought to include the knee and ankle joints. In estimating the length of the splint, you should measure the sound limb, and cut out a paper pattern of the length and shape of the splint required: unless this be done, it frequently happens that valuable time is lost in fashioning a splint which is afterwards found to be useless, being neither of the proper shape, nor sufficiently long. Various materials have been used for splints: flat pieces of wood, rounded at the edges, and

well padded, are most common, or a piece of bamboo will answer equally well. Stiff paste-board, dipped in water, moulded to the required form, and then allowed to dry, has been used as a substitute for wood. Instead of the above appliances, the limb may be covered with a bandage, and a layer of cotton wool placed round it; the cotton wool is then enveloped in layers of brown paper stuck together with good paste, until, when dry, it forms a sufficient substance to give a firm support.

A simple method of "putting up" a fractured limb, is that known as the *starched bandage*. A dry bandage is first applied to the whole of the limb; this is covered by layers of cotton wool, or tow, or any substance of a similar character; a layer or two of brown paper is placed over this, and then the limb is enveloped, for the required extent, by swathings of bandage well soaked in starch; lastly, a dry bandage may be applied over all. While one person is applying the bandage, another must keep the fracture in position, by drawing (*extending*) the lower fragment steadily towards him; and a wooden splint

must be temporarily applied, over all, to maintain the position of the parts until the bandage is dry, which generally takes about thirty-six hours.

When wooden splints are employed, no bandage should be applied beneath them, but they must be held in position by strips of plaster firmly applied at either end, so as to embrace both the splint and the limb; then, to prevent the limb from swelling, it should be firmly bandaged in its whole length. In compound fractures, where the skin has been lacerated, and the ends of the broken bone are exposed, the same treatment is to be adopted, with the exception, that, a sufficiently large space must be left, to enable you to dress the wound daily, without removing the splints and bandages. The wound must be syringed out with carbolic lotion (1 in 40), and dressed with the same every day. If swelling takes place, the splints and bandages must be loosened. All cases of compound fracture, are to be regarded with anxiety: they require great care, and no effort must be spared to obtain medical assistance. The regular action

of the patient's bowels must be secured (pp. 59, 60), and his strength maintained by tonics, and a moderate amount of stimulants, combined with a light, but nourishing diet. To keep the bed-clothes off the injured wound, a rough substitute for the "cradle" used in hospitals, may be made, by knocking the bottom and one side out of a small wooden case.

When the *starched bandage* is employed, after five or six days, the patient may be permitted to sit up, with his leg on a chair; and he may even be allowed to move about the room, provided he does not allow the weight of his body to bear upon the injured limb, which may be supported, so as not to touch the ground, by a broad, continuous band, passed over the neck and under the sole of the foot. In cases where the other forms of splint, described above, have been resorted to, the patient must be kept in bed for two or three weeks. The best guide as to whether a splint has been properly applied, and is doing its work well, is the feelings of the patient. The splints should not be removed for at least six weeks, except to remove any cause

of discomfort, or to relieve swelling, or, unless, owing to the shrinking of the limb, they require readjustment. In the great majority of cases, however, the patient will have had the advantage of medical advice, before so long a time has elapsed.

SPECIAL FRACTURES.

I. THE COLLAR-BONE (Clavicle).—This bone is generally broken about its middle part, the accident usually being the result of a blow, or a fall on the shoulder. The patient is unable to raise his arm, and, when the affected and sound sides are compared, it is seen, that the shoulder on the affected side, is flatter than that on the sound one; there is a sharp prominence of bone, over which the skin is tightly stretched, formed by the outer end of the inner part of the broken bone. The patient inclines his head towards the injured side, to relax the muscles, and supports the elbow of the injured side with his sound hand. These symptoms, in common with those mentioned above, in our general remarks on fractures, will enable you to determine the nature of the injury. .

Treatment.—This injury may be very simply treated as follows:—Take three large-sized pocket-handkerchiefs, roll two of them up as if to wear round the neck; pass a handkerchief *under* each armpit, and *over* the shoulder of the patient, forming a loop, and tying in a knot behind, leaving one end of the knot longer than the other. Take the end of the knot thus left on the right side, and pass it under the loop on the left, and *vice.versâ*; tie these ends firmly together in the middle, and the shoulders are, thus, firmly braced back. With the third handkerchief, form an ordinary sling with which the elbow and arm of the injured side may be supported. Another method, is to place a cone-shaped pad in the arm-pit, on the affected side, with the thick end upwards, and then form a figure 8 shaped bandage, so that the loops pass over each shoulder, and under each arm-pit, the bandage crossing and fastening at the back: the shoulders are, thus, drawn backwards towards each other; finally, form and adjust a sling, as in the previous method, to support the elbow, and keep the arm to the side. N.B.—*Place pads beneath knots.*

II. BROKEN RIB.—A rib may be fractured by a fall, or a blow, such as the kick of a horse. The seat of the injury is ascertained, by the pain produced on pressure, which is increased when the patient takes a deep breath.

Treatment.—Place strips of plaister, about three inches wide, round the injured side, so that the one end of the plaister rests on the breast-bone, and the other reaches to the spine. These strips of plaister should overlap each other, so as to form a stiff band, covering the injured rib, and extending four inches below and above it. A broad bandage should now be passed round the chest, sufficiently tight to afford support, without impeding the breathing. A recumbent position will, generally, be found the easiest. Should the strapping cause undue pain, or discomfort, it will be a sign that the broken rib is pressing inwards; in which case, the strapping and bandage should be removed, and the patient simply kept in bed, medical assistance being sought without delay, as serious symptoms may ensue.

III. BROKEN ARM.—The bone of the upper

arm, being liable to be fractured in many positions, it is, frequently, exceedingly difficult to distinguish between the different forms of fracture, and as each one requires some special contrivance, we must content ourselves with stating, that, in cases where you think the upper arm is broken, you must first get the broken bone into its proper position, and then place a well-padded splint on either side of the arm, extending from the arm-pit to the elbow, and held in position by a bandage. The fore-arm should be bandaged from the hand to the elbow, and supported in a sling, care being taken that the sling does not reach back to the elbow, so as to force it upwards. If the patient does not complain of any excessive pain or discomfort, the arm may be maintained in this position until medical assistance arrives.

IV. FORE-ARM.—Fracture of one, or both of the bones of the fore-arm is easily recognised, by the ordinary symptoms of fractures described above.

Treatment.—The arm should be placed with the thumb up, and the palm turned inwards, towards the body. A splint must then be

applied on the inner side of the arm, extending from the elbow, to the roots of the fingers, and another, on the back of the arm, extending from the elbow, to the back of the wrist. Both splints must be a little wider than the fore-arm, and they must both be well padded in the centre, to prevent the bones from being pressed together when the bandage is applied. The fingers should be moved about, freely, every day, or they are liable to become stiff from disuse.

V. BROKEN LEG.

Treatment.—The ends of the broken bones having been drawn into position, two well-padded splints should be applied, one on each side of the leg. If possible, a foot-piece, to run along each side of the foot, should be attached to the lower end of the splint. The foot must be kept at right angles to the leg, and not allowed to turn outwards: it may be considered to be in a proper position, if the inner edge of the great toe is in the same line as the inner edge of the knee-cap. Instead of the wooden splints, the starched bandage, or other appliances, described above, may be employed. The foot must be

carefully bandaged in each case, to prevent swelling.

VI. BROKEN ANKLE.—Fracture of the lower end of the outer bone of the leg, is, usually, associated with some displacement of the foot outwards. It may be caused by jumping on uneven ground—by a blow, or by a fall on the foot, by which it is suddenly twisted outwards. The patient must be placed on the injured side, with the injured limb bent; the foot is then to be grasped firmly, and drawn downwards, when a little manipulation with the fingers will restore the broken bone to its proper position.

Treatment.—A straight splint, well padded, is to be placed along the inner side of the leg, extending from the knee, to several inches below the foot; a wedge-shaped pad is then applied, between the splint and the leg, with its broad end downwards, that is, opposite the prominence of the ankle bone; the foot and leg must then be bandaged, firmly, to the splint. The foot may be turned inwards as much, or as little, as may be desired, by simply regulating the thickness of the pad. Instead of this method, two

splints, each with a foot-piece, may be placed on either side of the foot and leg.

DISLOCATIONS.—*General Remarks.*—The term *dislocation*, is generally understood to mean, the forcible separation, or displacement, of the bones of a joint from one another.

Symptoms.—In dislocation, there is loss of the natural outline of the joint; the relative position of the bony prominences of the joint to each other is altered, some unusual prominence being observed in one place, while an equally abnormal depression exists in another. The injured limb, may, on measurement, be found to be shorter, or longer, than the sound one, and there is always impairment, or, sometimes, even loss of the proper movement of the joint—any attempt to move it, usually producing great pain.

The principal differences between fracture and dislocation are as follows:—A dislocated bone, can only, as a rule, be moved with difficulty; whereas, a fractured bone, is, in most cases, readily moved about—preternatural mobility being one of its characteristics. Again, fracture of a bone, usually produces shortening of the

limb, while, in dislocation, the limb is, in most instances, lengthened. If a dislocated bone be restored to its proper position, it, usually, remains in its place ; when, on the other hand, a fractured bone is drawn into position, the displacement will return, as soon as you let go your hold.

The attempt to restore a dislocated bone to its place should be made as soon as possible after the accident has occurred, and before the faintness produced by the injury has passed off; for the longer the delay, the greater will be the difficulty experienced, in reducing the dislocation. In endeavouring to rectify the displacement produced by a dislocation, our object is to get the dislocated bone into such a position, that it may be drawn into its socket by the surrounding muscles. In some cases, the object sought may be attained, by simply moving the displaced bone about in all directions, alternately raising, depressing, drawing it from side to side, or rotating it. In other cases, again, the socket of the dislocated joint must be held firmly by one person, while another pulls steadily on the displaced bone, until the resistance of the

muscles is overcome. While pulling steadily on the bone, you should, at the same time, rotate it, or move it about in different directions, until the bone slips into its socket. Every care must be taken to avoid undue bruising of the parts around, and you should never allow yourself to make use of any unnecessary violence, or some of the large vessels, near the joint, may be lacerated, and serious symptoms arise. When the dislocation has been reduced, the joint should be kept at rest, for two or three weeks, by placing the limb in a splint; and the inflammation should be allayed by warm fomentations, or by the application of cold, by the irrigation method (see page 16), or a bag containing ice may be placed over the swollen joint.

SPECIAL DISLOCATIONS.

DISLOCATION OF THE LOWER JAW may be produced by a sudden spasm of the muscles when the patient is yawning; or it is, sometimes, caused by a blow, administered on the side of the face, when the mouth is wide open.

Symptoms.—The patient cannot close his

mouth, which is, more or less, widely opened; the teeth of the lower jaw are protruded in front of those of the upper one; the saliva dribbles out of the mouth, and the patient can only speak with difficulty. When the dislocation exists on one side only, the jaw is, in most cases, very markedly displaced towards the opposite side.

Treatment.—Seat the patient in a chair, with his head against the wall. Wrap a stout handkerchief, or towel, around each of your thumbs, then grasp the jaw with both hands, the thumbs resting inside the mouth, on the lower jaw, and behind the last tooth, while the fingers surround the chin. Now, with your thumbs, press the jaw downwards and backwards—that is, from you, while, at the same time, you raise the chin with your fingers; the jaw will slip into its place with a sharp snap. Do not forget to protect the thumbs in the way just described, or they may be well nigh bitten through when the jaw returns to its place. The jaw must be supported for a week or ten days by the following contrivance, known as a *four-tailed bandage*:—Take a piece of linen, or bandage, about four

inches wide, and one and a half yards long ; double it to half its length, and, starting at the open ends, tear it down the middle to within six or seven inches of the end ; then, in the square portion which is left untorn, cut a hole to admit the chin. Now, open out the bandage to its full length, and apply it, allowing the chin to protrude through the aperture just made ; tie two of the tails above the crown of the head, and the other two at the back. The jaw will now be held firmly in position. The patient should be fed on slops for a few days, and not allowed to talk.

DISLOCATION OF THE SHOULDER.—This injury is very common, and may be produced by a fall on the shoulder or elbow.

Symptoms.—There is flattening of the shoulder on the injured side, and the head of the displaced bone is, generally, felt in the arm-pit, or beneath the collar-bone, where it produces an elevation. The patient cannot move the joint, nor can it be readily moved for him, and there is, usually, lengthening of the limb.

Treatment.—A simple method is as follows:—Place the patient on his back ; seat yourself

beside him on the same side as the injury; fix the foot furthest removed from the patient firmly against some object, and, removing your boot from the other foot (that nearest the patient), place it, with the heel in the patient's arm-pit; now, grasp the injured limb at the wrist, and draw it, at first, steadily downwards, and then across the front of the patient, when, the foot in the arm-pit, acting as a fulcrum, will cause the bone to slip into its socket. When the bone has been returned to its proper position, a cone-shaped pad, with the thick end upwards, must be placed in the arm-pit, a figure 8 shaped bandage applied (see page 95), the arm held to the side by a turn or two of bandage, and the elbow supported by a sling.

DISLOCATION OF THE ELBOW.—The most common kind of dislocation of the elbow, is that in which both the bones of the fore-arm are displaced backwards, behind the bone of the upper arm. The lower end of the bone of the upper arm, forms a rounded eminence in front of the joint, while the displaced bones, form a correspondingly abnormal prominence at the

back. The elbow is bent, and cannot be moved.

Treatment.—One plan is, for one person to hold firmly the lower part of the bone of the upper arm, while another draws the fore-arm forward, until it slips into its place. Another method is the following:—Seat the patient, sideways, on a chair, put one of your feet upon the chair, and place the knee in the bend of the dislocated elbow; now, take hold of the fore-arm, and, pressing against its inner side with your knee, so as to push it away from the back of the upper arm, draw the fore-arm downwards and forwards, till it slips into its place. The limb should now be bent, and placed on a splint, one limb of which runs along the inner side of the upper arm, and the other, along the inner side of the fore-arm, and the treatment adopted, which we have pointed out in our general remarks on dislocation. Dislocation occurs much less frequently in the joints of the lower limbs, than in those of the upper limbs. Some of the dislocations of the joints of the lower extremity, are often very difficult to recognise, and, many cases

may occur, in which it may be very hard to determine whether the patient is suffering from a dislocation, or a fracture. We must, therefore, repeat the advice we gave in speaking of fractures, namely, that in all cases of dislocation, and, *especially*, in those of the lower extremity, and in cases where the dislocation is *compound*, that is, where the skin is lacerated, and the injured joint exposed, you should send for medical aid without delay. In cases, moreover, where you have any doubt as to whether you have to deal with a fracture or a dislocation, you had better place the limb in as comfortable a position as possible, and keep it at rest until you have succeeded in obtaining medical advice; as, should you apply the methods which are appropriate for the reduction of a dislocation, to a fractured limb, you may injure the vessels which lie adjacent to the fractured bone, and do the patient serious harm.

BRUISES AND SPRAINS are, as a rule, best treated by the application of some spirit lotion, or by a cold-water bandage.* In some cases, however, the knee-joint may from a sprain or

blow become swollen and inflamed. This condition must on no account be neglected. Very simple means will, as a rule, produce a cure, but, if the case is neglected, a state of chronic inflammation of the joint is liable to result, serious degenerative changes may take place, and the utility of the limb may be permanently impaired. When, from any cause, the knee-joint becomes painful, inflamed, and distended, the joint itself, and the muscles which act on it, should be set at rest by the application of what is technically called a "back splint," which may be made from a piece of board, covered with a good pad, made of any soft material, and sufficiently long, to extend from the upper part of the back of the thigh, to within six inches of the ankle-joint. The splint may be kept in position, by means of a long strip of plaster, passed firmly round the limb at either end. The first factor in the treatment has now been adopted, and the inflamed part has been set at rest. The further treatment, consists in the application of cold, which may be applied directly, or by the irrigation method

(described in discussing the treatment of sun-stroke), or, instead of cold water, lead lotions, or the evaporating lotion already described, may be applied. Attention must be paid to the state of the patient's bowels, and to his general health. Under this treatment, the inflammation will probably subside ; the joint may still be slightly enlarged, but the application of a little iodine will cause this to disappear. The splint may now be taken off, but the limb should still be kept bandaged for a time, until it feels perfectly strong ; if any stiffness exists, the knee should be well rubbed, two or three times a day, with soap liniment, or a weak ammonia liniment. The treatment we have here indicated, will, of course, apply to any joint which is acutely inflamed.

CRUSHED FINGER.—When “roughing it” abroad, you are very likely to meet with the accident known as *crushed finger*, produced, generally, by some heavy weight falling on the tip of the finger.

Treatment.—Wash the finger thoroughly in carbolic lotion ; (1 in 40) apply a splint, made

of a light piece of wood, to the under surface of the finger, and keep it in place with two narrow strips of plaister, passed round the finger, so as to include the splint. Then soak some lint in a 1 in 20 solution of carbolic acid, and apply it over the tip, and round the sides of the finger; over this, place a piece of oiled silk, and then apply a light bandage. Dress the wound, daily, with a 1 in 20 solution of carbolic acid, and keep the hand in a sling.

REMARKS ON A FEW OF THE COMMON REMEDIAL AGENTS.

BATHING.—We have already spoken of the necessity of thorough cleanliness, so as to keep the skin in a healthy state. Bathing in cold water in the morning, is generally very invigorating; but you must be guided by its effects. If the cold bath produces a pleasant glow, it is a sign that it agrees with you. If, however, a sense of chilliness remains after its use, the bath should be taken tepid, instead of cold. Avoid too much bathing, and never bathe after a heavy meal. The hot bath will be found

useful in feverish states of the system, but it should not be adopted generally. When the skin is irritable, an alkaline bath, such as we have suggested in speaking of prickly heat, will afford much comfort.

DISINFECTANT FLUID.—About eight grains of permanganate of potash dissolved in an ounce of water, will make a preparation similar to Condry's fluid, and it may be used, when diluted, for the same purposes. It is much more convenient to carry the crystals, than to carry the bottles containing the disinfectant solutions.

CARBOLIC ACID.—A well-stoppered bottle of the crystals should always be taken. The crystals will liquefy when the temperature exceeds 60° ^{°C.} Fah. A small quantity will last a long time, as you only require to use it diluted in the proportion of 1 in 20, or 40 parts of water.

Messrs Calvert & Co.'s No. 2 Carbolic Acid for external medicinal use (in crystals) is the best to take. When wanted for use, stand the bottle, up to the neck, in hot water, when the acid will readily liquefy, and the amount

(15, 57)

required can be measured out. It will solidify again on cooling.

WATER-DRESSING.—When this is applied, a piece of oiled silk should be placed over the lint, and care must be taken that it extends beyond the lint all round, or evaporation will take place, and the lint will very soon become dry.

IODINE.—Tincture of iodine will be found of great use in many simple complaints. When you wish to obtain the action of iodine, for some time on any part, say on a joint, such as the knee, you should paint one side of the joint only, the second application, should be on the other side of the knee, the third, above, and the fourth, below it; and, by that time, you will be able to come to where you started, and go round again if desired. In this way, the prolonged action of iodine may be secured without any chance of producing blistering.

LINT.—When lint is used for application to a wound, the smooth, *not the fluffy side*, should be placed next the raw surface.

EMETICS.—The simplest emetic, is lukewarm water, two or three tumblers of which, will

make most people sick in a very short time ; or, a small table-spoonful of ordinary table mustard, mixed with a little more than half a pint of warm water, will often act, when water alone has failed. The simplest and safest drug to use as an emetic, is ipecacuanha ; 15 to 20 grains may be taken in a tumbler about three parts full of water ; the person should then drink freely of warm water, and, in a very short space of time, the drug will operate effectually.

FREEZING MIXTURES.—A simple freezing mixture may be obtained by mixing equal parts of ammonium, nitrate, and water. This will lower the temperature from 50° to -4° Fahr. Equal weights of nitre and sal ammoniac (chloride of ammonium), dissolved in their own weight of water, lowers the temperature from 50° to -10° Fahr. The temperature of the contents of a bottle may be considerably lowered by wrapping it in a moist cloth, or better in a flannel jacket moistened with water, and placing it in the sun ; or, instead of this, take the bottle wrapped in the cloth by the neck, and whirl it round in

the sun. Evaporation takes place, and heat is abstracted from the bottle and its contents.

We subjoin a list of generally useful medicines, &c., which should be packed in a shallow tin box, provided with compartments, and capable of being securely locked ; but you must be guided in your selection, by the country you are about to visit, and the probable duration of your service ; for instance, if visiting a country noted for the prevalence of fever, you would naturally take an extra supply of quinine.

- | | |
|-----------------------|-----------------------|
| 1 Alum | 13 Cockle's pills |
| 2 Ammonia | 14 Cooper's efferves- |
| 3 Bandages | cing eucalyptus |
| 4 Bluestone | lozenges |
| 5 Belladonna plaister | 15 Do. do. liver Do. |
| 6 Camphor | 16 Enema syringe |
| 7 Carbolic acid | 17 Fuller's earth |
| 8 Castor oil | 18 Glycerine |
| 9 Chloral | 19 Iodine |
| 10 Chlorate of potash | 20 Ipecacuanha |
| 11 Chlorodyne | 21 Lancet |
| 12 Citrate of mag- | 22 Lapis divinus |
| nesia | 23 Laudanum |

24 Lawton's absorbent cotton	32 Powder, Dover's
25 Lint	33 Quinine
26 Mustard leaves	34 Salvolatile
27 Nitrate of silver	35 Scales
28 Needles (bent) and silk sutures	36 Spongiopiline
29 Perchloride of iron	37 Sticking plaister
30 Permanganate of potash	38 Sulphur
31 Podophyllum pills (p. 63)	39 Thermometer (clinical)
	40 Tweezers
	41 Zinc ointment

The following, is a comparative scale which may be found useful:—

LIQUIDS:—

1 minim	=	1 drop.
60 minims	=	1 drachm or teaspoonful
8 drachms	=	1 fluid oz. or 2 tablespoonfuls
20 fluid ounces	=	1 pint.

SOLIDS.—Great danger might arise by attempting to estimate the weights of medicines, by any comparative scale as above. You should provide yourself with a small pair of scales, and legibly

marked weights. Take care to obtain weights with written marks instead of symbols, so as to avoid the chance of an inexperienced person making any mistake in weighing medicines.

RESTORATION AFTER DROWNING.

Send at once for medical aid, and, if the patient has ceased to breathe, resort *instantly* to one of the methods of artificial respiration ; of which the following, invented by Professor Howard, of New York, and adopted by the New York Board of Health, is one of the simplest and best :—

Remove all tight clothing from the neck and chest, especially the braces ; roll the patient's clothes into a bundle, and, laying the patient on his back, place this bundle of clothing under his loins, so as to make the lower ribs bulge prominently forward, and raise them higher than the level of his mouth. One person is now to stretch the patient's arms forcibly back above his head, and, crossing them, is, with one hand, to hold them thus stretched back, while, with the other hand, he draws the patient's tongue out of the

side of his mouth, and holds it with a dry handkerchief. Another person must now kneel astride the patient's hips, and, resting his hands on the stomach, spread out his fingers so as to grasp the waist about the short ribs. He is now to press steadily forwards, throwing all his weight upon his hands, and squeezing the ribs "*as if he wished to force everything in the chest upwards, and out of the patient's mouth.*" This pressure is continued while *one, two, three*, can be slowly counted, when it is suddenly removed with a final push, which springs the body of the operator back to his first kneeling position. After an interval during which *one, two*, can be slowly counted, the pressure is repeated, and the process continued as long as is necessary (Druitt), that is, for two or three hours, or until life has been pronounced extinct by a medical man. When the patient begins to breathe again, the surface of his body should be vigorously rubbed with dry towels, and he must be placed between warm blankets. At first, a teaspoonful or two of warm water should be given to the patient, and, if he can swallow readily, a little warm wine, or weak

brandy-and-water may be given. A very common mistake is to give brandy undiluted, or mixed very strong. You should always bear in mind that, within reasonable limits, the more you dilute your brandy, the better will the vessels of the stomach absorb it, and its effects will be produced more rapidly, than if you give in a concentrated form. We have personally tested this method of artificial respiration, and can testify to its efficacy. The method is equally applicable to the treatment of suffocation produced by causes *other than drowning*.

HOSPITALS.—At the commencement of this chapter, we urged on our reader the paramount importance, in case of sickness, of availing himself, when possible, of the skill and experience of medical men, rather than run the risk of “treating” himself; we would now, before taking leave of this subject, supplement this advice by a few remarks on the subject of hospitals. One of the most truly beneficial results of the extension of Her Majesty’s dominion in the tropical countries of the world, has been the establishment of hospitals

for the fostering care of her subjects, irrespective of race or creed. There is not a town of any importance, but possesses its hospital, with efficient medical staff, and due complement of trained nurses; yet, how many there are, within easy reach of the aid thus freely offered them, who, in time of dire sickness, allow an unaccountably absurd prejudice against "going to hospital," to weigh against all these advantages. Sick, in a foreign land, away from the comforts of a home, where could a man hope to be so well nursed and looked after, as in one of our Government hospitals? For our own part, we shall ever remember, with feelings of the deepest gratitude, the skilled and attentive medical treatment, and the tender nursing, we once received at the kindly hands of the staff of one of these noble institutions.

CHAPTER III.

GENERAL REMARKS ON DIET.

The Use of Alcohol, Water, &c.—How to relieve Thirst
—Tobacco—Food—Regulation of Diet—Meat—Fish
—Poultry—Vegetables—Milk—Condensed Milk—
Eggs—Bread—Tinned Provisions—Rice—Fruits—
Native Cooking—The Use of a “Warrener”—Native
Servants.

IN the preceding, pages we have frequently had occasion to refer to the important part diet plays in the maintenance of the health. As a general rule, people pay but little attention to this subject. In the tropics, however, the question of diet is a very serious one. In these countries, errors in this particular may be followed, not only with temporary inconvenience and discomfort, but by permanent injurious results. The importance of this fact has become so generally recognised, that there are now

many valuable books which discuss every aspect, and enter into every detail, of this comprehensive and intricate subject. Such being the case, it will only be necessary for us to put forward, very briefly, those suggestions which our own tropical experience may have led us to regard as interesting and important.

1. As regards what a man should take to drink. All authorities are now pretty well agreed, that the less anyone, who may be called upon to visit tropical countries, takes in the way of alcohol, the better it will be for him. Apart from the fact, that alcohol, in any considerable quantity, is prejudicial to even the healthy body, it must be remembered, that we have to resort to its use during many critical periods of disease, and the benefit derived from its administration on these occasions will depend, in no small degree, upon the amount we were accustomed to take when in a state of health. Few, however, will be found who will altogether dispense with the use of alcohol, and, indeed, there seem to be very many people who derive a certain

amount of benefit from partaking of a moderate quantity in the course of the twenty-four hours. Assuming, then, that by far the greater number of people will prefer to take a moderate amount of alcohol, the question arises as to the form in which it should be taken. There can be but little doubt, that good claret taken with water is the least injurious ; next to this, *light* wines, especially the Australian light wines, are the best ; then there is beer, and lastly spirits. Of all the forms of alcohol which can be taken in a hot climate, spirits are the most injurious. The pernicious habit, of constantly taking small quantities of alcoholic drinks, during the day, should be avoided. These "nips" are very injurious to the system ; alcoholic beverages should only be taken at the ordinary meals, or when partaking of solid food.

Tea and coffee may be taken in moderate quantities ; the former, especially, should be taken sparingly, as it has a tendency to produce flatulency. Chocolate, will be found, by many, to be a very nutritious and pleasant

beverage. The addition of a little carbonate of soda to a tumblerful of lime juice and water, will make a pleasant effervescing drink. Cold tea and lime juice is very refreshing. The pulp of two tamarinds beaten up in a pint of water, and strained, makes a good drink. Sherbet is pleasant and harmless. Vermouth and water, forms an agreeable change, as a drink with breakfast, in extremely hot weather. Ice, when procurable, may be used largely. We now come to the important question of water. All water used for drinking purposes must, if possible, be boiled and filtered. You should take care, that it is not obtained from any place where it may have been contaminated by decaying animal and vegetable matter. As regards the question of thirst, a little water taken frequently, on the march, or when exposed to the influence of a hot sun, is better than taking large quantities at a time. While on this point, we would draw attention to the fact, that it is not the rapid introduction of fluid into the stomach, which allays thirst, so much, as the gradual passage of moisture over the back of

the throat. It is a cardinal point to remember this fact, that *the more slowly the fluid passes down the throat, the greater will be the relief experienced.* We can ourselves vouch for the truth of this statement; when almost deprived of water for several days, we easily made a cocoa-nut gourd full of water suffice us for the whole day. From time to time, a little of this precious fluid was allowed to pour slowly into the mouth, and we did not allow it to pass down into the stomach, until the whole of the back of the throat had been well moistened. If this means of taking fluid be adopted, a very small quantity will suffice to relieve the sense of thirst and dryness about the throat, which is, otherwise, so terrible. We can confidently recommend "Cooper's effervescing thirst lozenges" as a great palliative of thirst. These lozenges, are about the size of an ordinary acidulated drop; when placed upon the tongue, an effervescence immediately commences, such as would be produced by dry sherbet, and, indeed, the flavour of the lozenge is most agreeable, and very similar to

sherbet itself. When the mouth is very dry, and no fluid can be procured, some people experience relief from slowly chewing a piece of dry biscuit. Before bringing these remarks to a close, we must give a word of warning about drinking the milk of the green cocoa-nut. Many people, on first entering the tropics, take large quantities of this milk, but it is not a wise thing to do ; it often disturbs the stomach and bowels, and should only be partaken of sparingly.

TOBACCO.—We advise the use, but not the abuse of this article.

FOOD.

Before proceeding to notice, in detail, some of the more important articles of diet, we must say a few words on the general subject of food in the tropics.

Regulation of Diet.—Many people are willing enough to take precautions with regard to drinking water, and some there are who give consideration to words of warning on the subject of alcohol ; but few, indeed, think it necessary to pay any special

attention either, to the selection of their food, or the amount they consume; overlooking the fact, that carelessness in these respects, is as antagonistic to the laws of health, as is the undue indulgence in alcohol. The natives of tropical countries depend for their sustenance, to a very great extent, upon a vegetable diet; in some countries rice, and, in others, fish, form the staple articles of food; while fruits of all kinds are largely consumed. Meat but rarely forms an article of the native's daily diet, and, if taken at all, it is only partaken of in small quantities. Not only is the above-mentioned light description of diet found amply sufficient by natives for the due preservation of health and strength, but Europeans, even, who may have been born in these countries, intuitively adopt a similar description of diet, and thrive upon it.

These facts are sufficient to prove that there is no necessity for the many, heavy meals, which Europeans, who reside in the tropics, often consider it necessary to take in the course of the day, on the plea of "keeping up their strength." It is also a common practice at these heavy

meals, to indulge in highly-seasoned dishes, with a view to “stimulate the appetite.” It is true, that highly-spiced food may give a temporary “fillip” to the appetite, but the continued excessive use of condiments, can only tend to weaken the digestive organs, and seriously impair the health.

MEAT.—In hot countries meat, as a rule, is not tender, in consequence of the necessity of cooking it within a short time of its being killed. Mutton, when it can be obtained, is much to be preferred to beef, being easier of digestion. Pork should be avoided, unless home-fed.

FISH is very wholesome when fresh, but it should be carefully inspected before use, as the natives have a way of concealing its staleness by the grease in which they cook it. If stale, it is very injurious. All shell-fish should be avoided.

FOWLS and ducks, especially the former, can generally be obtained, are very wholesome, and form a light and nutritious food.

VEGETABLES, when they can be obtained, are very desirable as an article of diet. Care must be taken that they are thoroughly well

cooked. In addition to the vegetables common to the tropics, such as yams, sweet potatoes, bread-fruit, &c., the natives of these countries bring into daily use many vegetable products, such as the shoots of the young bamboo, and the mango and plantain when in the green state, which a European would not think of utilising as vegetables. Many European vegetables are to be met with in different tropical countries.

MILK.—New, or fresh milk, is generally difficult to obtain; the natives, to prevent its turning sour, are in the habit of boiling it, and owing to the way in which this is done, it is generally rendered smoky and distasteful. By adding fifteen grains of bicarbonate of soda to a quart of milk, you may delay its turning sour for some time. The natives of many tropical climates are in the habit of curdling the milk by adding some acid substance, and, partaking of it in this form, they find it most refreshing and nutritious. Carefully prepared, and in limited quantities, this is an acceptable article of diet for the European.

CONDENSED MILK.—While on this subject, we would point out the inestimable boon the “Anglo-Swiss milk” is to the ordinary traveller. It is portable, pleasant, and nutritious, and no traveller should be without a supply of it. It is necessary, however, in laying in a supply of tinned milk, for the traveller to assure himself that the same is sweet and fresh. We have used the “Anglo-Swiss milk” in every stage of its tinned existence, from the perfectly fresh, “greenery-yallery” tinted substance, which, like thick cream, will just pour from the spoon, and makes your morning cup of coffee a perfect luxury—to the uninviting compound, of the colour, and, almost of the consistency, of “old brown Windsor soap,” which, after many annual bakings on the shelf of the native shop-keeper, obstinately refuses to mix even with boiling water, and settles down at the bottom of your cup like so much fatty fibre. The better descriptions of tinned butter, as supplying the place of inferior ghee, and other oleaginous messes, for cooking purposes, is most acceptable.

EGGS can generally be procured, but most frequently in a, more or less, stale state. The common native method of testing the freshness of an egg, is to immerse it in a pot of water, when the fresh egg sinks to the bottom, while the stale one is more or less buoyant.

BREAD.—In India, you must be most particular on this subject, as the bread, being made with fermented toddy instead of yeast, is apt to turn sour in a very short space of time. Good, wholesome, plain biscuit, when obtainable, should be laid in by anyone undertaking a journey, as he cannot calculate on the bread keeping in an eatable state for more than two or three days at the outside. In cases where biscuits are not obtainable, the bread should be cut into slices, and baked in a slow oven so as to form “rusks.” In this form, if kept in tin boxes, and overlooked from time to time, it will keep almost as long as biscuit.

TINNED PROVISIONS.—In the present day, there are such facilities for obtaining tinned provisions, that the traveller who is provided with them, may consider himself more or less

independent of supplies from the country through which he has to pass. But, we would remark, generally, both on the score of health and economy, that it is inexpedient to use tinned provisions when fresh can be obtained. Nevertheless, it frequently happens, that a man is almost entirely dependent upon such stores as he can carry with him. In such cases, while leaving it to him to select what supplies he may consider necessary, we will confine ourselves to advising him, when he is purchasing his stores, to open a tin or two, to assure himself of the freshness of the contents, because the tin will retain its outwardly new and fresh appearance long after the contents have become unfit for consumption. Most tinned provisions have more or less of an unpleasant flavour, if used immediately after opening the tin; this may be avoided, by turning them out some hours before they are intended to be used. The directions for opening a tin should be carefully read, as one special side is generally indicated. All tins selected should be carefully examined, to see that they are air-

tight; as, should there be the smallest hole in the tin, the contents, if not already bad, would quickly become so. Any tin that is bulged out in appearance, should be regarded with suspicion, as such bulging generally results from the tin not being air-tight, and is due to the pressure caused by the noxious gas generated by the decomposed contents. To test an apparently bulged tin, press the upper surface with the thumb, when if the tin, having given to such pressure, *rebounds*, it is a sure sign that it is not air-tight, and such tin should be rejected without hesitation.

RICE, one of the best substitutes for bread, is the staple food of nearly all natives of the East. It is cooked in various ways, but plain boiled rice is most commonly eaten, either by itself, or in combination with some other dish. When carefully and sufficiently boiled, it forms a most wholesome and nutritious article of diet, but is most unwholesome if eaten when insufficiently boiled, or after it has been allowed to get cold. Plain boiled rice, served with stewed prunes, or with other sorts of stewed fruit,

forms a most wholesome and palatable adjunct to a meal; while, of ground rice, may be made a pudding that would *tempt* an invalid, where ordinary coarse food might fail.

FRUIT.—In the morning, a little fruit is a very good thing, but, in partaking of it, the precautions we mentioned above must be remembered. Be cautious of eating fruits and berries, except those which are generally known.

NATIVE COOKING.—The general fault of the cooking, is the use of too much ghee or grease, also the too free use of condiments. The ghee, or clarified butter, which is used in nearly every kind of cooking in the East, is sometimes of the most inferior description, and even, occasionally, in a rancid condition. Natives generally have no hesitation in using it in this state, and the utmost precaution should be taken to inspect it daily. In the East, besides earthenware, native cooking-pots and utensils are made of a basis of copper, which is “tinned” over, and care must be taken that the tinning is carefully renewed. In regimental cook-houses

the Government order such utensils to be "tinned," or "callayed," once a month. We have always found a block-tin "Warrener" cooking-pot most useful when travelling. In it an excellent stew may be made; or your meat and vegetables can be boiled separately in it at the same time. We have used this cooking-pot over the ordinary wood or charcoal fire. Complicated cooking arrangements, that require spirit lamps, &c., are a mistake. When travelling, an excellent method of keeping your cooking-pot clean, is to make a paste of wood ashes and water, and well bedaub the outer side and bottom of the pot before placing it on the fire; when your cooking is finished for the day, this paste easily washes off with a little water, leaving the pot bright and clean.

Having touched upon the shortcomings of native cooks in certain respects, it is but fair to add that, as a body, they exhibit wonderful ingenuity in preparing the most palatable and appetising dishes from the slenderest materials; and that, too, often under circumstances that

would utterly paralyse the energies of a European cook. Having constructed his fire-place, and caught his fowl, a Madrasee cook, in an incredibly short space of time, will *turn you out* a chicken cutlet that would do no discredit to a Parisian chef. The *modus operandi*, however, had best not be too strictly enquired into.

For residents in tropical countries, many useful works on cookery are available, notably, that excellent, and now well-known work, “Culinary Jottings for Madras,” by “Wyvern”; an eminently practical cookery-book for the Anglo-Indian housekeeper, insomuch, as the items enumerated in the various recipes, have, for the most part, been duly subordinated to the ordinary food resources of an Eastern market, or bazaar; but a volume on so comprehensive a subject, could scarcely be deemed a necessary item in the kit of one going abroad on temporary duty. We would nevertheless suggest, as the upshot of our own experience, that some knowledge of the more simple forms of cookery, such as:—the preparation of beef-tea, mutton or chicken broth, a few soups, an ordinary hash, or stew, an

omelette, a custard pudding, &c. &c., is not difficult of attainment, and will, on occasion, be found most useful when “knocking about the world.”

NATIVE SERVANTS.—Do not expect too much at the hands of a native servant, for, in such case, your expectations are not likely to be realised. Under kind, but consistently firm treatment, a native servant will generally serve you satisfactorily; in time of sickness, often with a devotion you would scarcely deem him capable of, but want of consideration and bullying, will be almost invariably retaliated by one, who, notwithstanding his subordinate position, and outwardly submissive demeanour, will, yet, soon make a bullying master painfully aware, that he has it in his power to cause him a host of petty annoyances and discomforts. Except under gross provocation, to raise a hand against a native servant is a cowardly act that no gentleman would be capable of committing; and, even under circumstances of the grossest provocation, it is imperative that a man should learn to keep his temper sufficiently under control, to resist the

momentary temptation to strike the delinquent. The punishment of a grave offence, must be left to those whose duty it may be to administer the law: there are on record, only too many lamentable cases, in which, a blow delivered in the heat of anger, by a European, has resulted in the immediate, or lingering death of the unfortunate victim of his ungovernable temper.

The practice of fining for trivial offences is to be deprecated; the pay of a servant is but sufficient for his wants, and to mulct him of any portion thereof only tempts him to recoup himself by illegitimate means. You must make due, and even ample allowances for the characteristic weak points in the native domestic, in the matter of “picking and stealing,” and, if after repeated warnings, you find him to be incorrigible, dismiss him from your service. You will do wisely to keep all money and valuables under strong lock and key; as a rule, too, you will find that wines or spirits will *go further* if you adopt the same prudent measures. As regards clothing, and articles in every-day use, we have found it best to make out a detailed list of the same, in the

presence of our servant, and then hand them over to his sole and entire charge. As personally responsible for your general kit, he is less likely to abstract and make away with items thereof, than if the responsibility were divided; besides, you can easily keep a check on him by running over the list at odd times. You will find it true economy to pay your servant liberal wages. Native servants feed, and, in most instances, clothe themselves out of their pay, and you can neither expect good work from a man with an empty stomach, nor a presentable appearance, from one who has not the wherewith to buy a decent coat to his back. Should your servant have to accompany you to a colder climate, necessitating warmer clothes, you must expect to bear the cost of supplying the same.

We have written at some length on this subject, even at the risk of being accused of *sermonising*, but our experiences of native servants have been so many and so varied, that we feel assured the conclusions we have arrived at are based on sufficiently solid ground.

The remarks in this chapter have been of a

very general character, but many hints of equal value to the civilian as to the soldier may be obtained from that most useful work "The Soldier's Pocket-book," written by General Lord Wolseley, G.C.B., G.C.M.G.

CHAPTER IV.

CLOTHING AND EQUIPMENT.

Head Covering—The Selection of a Helmet—Body Clothing—Jacket—Pantaloons and Trousers—Braces and Belt—Shirt—Studs and Sleeve-links—Vest—Drawers—Cholera-belt—Kummerbund—Socks—Sleeping Suits—Night-cap—Pocket-handkerchiefs—Leggings—“The Puttee,” or Leg Bandage—Waterproof Coat and Leggings combined—Lounge Suit—Portmanteau—Kit-bag—Vulcanised - rubber Water-bottle—Pocket-filter—India-rubber Basin and Bucket—Waterproof Sheet—Scarlet Blanket—Air Pillow—Bath Towels and Sponge—Dubbin—Knife, Fork, and Spoon—Housewife—Disinfectant—Soap—Lantern and Candles—Tin Openers—Pocket-knife—Padlock—Flask—Watch—Looking-glass—Guide-book—Umbrella—Compasses—Goggles—Mosquito Curtains—Revolver—Shoulder-belt—Saddlery—Management of Horse—Feeding—Watering—Grooming—Recreation hints—Conclusion.

THE duties that call upon men to serve in tropical climates are so varied in their nature, that the following remarks upon clothing and

equipment, must be accepted as subject to modification, not only, in accordance with the special features of the climate of the country to be visited, but, with due regard to the nature of the employment to be taken up. It is obvious, that the kit and clothing required by a man whose work necessitates frequent exposure to the full effects of the climate, will, in few respects, be adapted to the requirements of one whose occupation is of a sedentary nature. We confine ourselves, however, to describing the various items of kit we consider necessary for one who may be temporarily called upon to perform active out-door work, leaving to the experienced outfitter, the more elaborate task of providing for those who contemplate permanent residence and employment in the tropics. Confining ourselves to the statement contained in our preface, that these suggestions are only intended to assist those who may have had no previous experience of active work in hot climates, we will proceed to discuss, in detail, the various items of outfit that would be generally required.

CLOTHING.

HEAD COVERING.—To combine comfort, with due protection to head and neck, is the main consideration. A hat should be light in weight, well ventilated, properly balanced on the head, and of substance to resist effectually sun or rain. Hats and helmets made of pith, cork, or felt, with or without puggaries, are obtainable at most of the leading London hatters, in such variety of shape and special excellence, that the selection of a fitting "Solar Topee," should be a matter of no great difficulty; but the purchaser should bear in mind the following points:—

(I.) If required to wear in a specially dry climate—Egypt, for example—pith would be the most suitable material to select, as being lighter than either cork or felt. But remember, a pith hat is useless in a wet climate; becoming saturated with rain, its weight is enormously increased, it loses its shape, and soon falls to pieces.

(II.) A puggary, certainly, gives a finish to a hat, besides affording additional protection; but on horseback, especially when riding fast,

it is often found to be inconvenient, as, by adding to the weight of the hat, it disturbs its balance, and gives it a tendency to shift to the back of the head, thus, dragging at the chin-strap, and half choking the wearer. If a man's work necessitates his being frequently in the saddle, he should select a hat that can be worn with or without a puggary, and one provided with a strong leather chin-strap.

(III.) Too much attention cannot be given to the proper ventilation of a hat. Besides ventilation in the crown, there should be plenty of space all round, for the free passage of air between the head-band and the inner side of the hat. Attention is paid to these points in all the better description of hats sold for tropical wear ; but, on service, much discomfort is occasionally experienced from the fastenings connecting the head-band with the body of the hat becoming loose, and the hat shifting about the head, although the head-band remains tight round the forehead. In choosing a hat, therefore, be careful to test the head-band, and see that it is firmly connected

with the body of the hat, while still allowing proper space for side ventilation.

(IV.) Many helmets lack proper protection for the sides of the head over the ear, while affording ample shade front and rear. It must be remembered, that it is just as necessary to protect the sides, as the back of the head, and a shape affording such protection should be selected accordingly.

(V.) All hats or helmets which, in themselves, not affording a sufficient amount of protection, require detached covers, should be rejected. From frequent use, the fastenings of such covers become loose and unserviceable, while the covers are liable to shrink and lose their shape, thus, taxing the patience of the wearer, by continually calling upon him to exercise his ingenuity in devising new expedients for keeping them in proper position. In riding, also, detached covers, unless very securely fastened, are liable to be blown off the hat ; and, the chances are, the rider, not having the wherewithal to resecure the cover, stuffs it into his pocket, and continues his ride under

a scorching sun, with but scant protection for his head and neck.

(VI.) The position of a head-band in a *solar topee* is also a matter to be noted. If set too deep within the hat, it has not only the effect of bringing the head of the wearer too near the crown of the hat, but the brim, coming too far down over the eyes, interferes with the line of sight, and necessitates a constrained, backward position of the head that is most trying and irksome. It is no uncommon thing, in hot countries, to see a man with his head so buried in an enormous helmet, that the lower features of his face being alone visible, appear as struggling to emerge therefrom, like a young chicken trying to wriggle out of its shell. Such a description of helmet, probably, suggested an amusing picture that appeared in one of our comic papers some time back, of a man wearing a huge hat, but who was requested to "come out of it," as it was of no use his trying to hide himself, for he had been "recognised" by his legs. On the other hand, a head-band that is not set sufficiently deep in a hat, has the effect

of making the same *to cock* on the head, without affording sufficient shade to the eyes, or protection against the slanting rays of the morning or afternoon sun.

(VII.) The brim of any hat or helmet that may be selected, should be lined with some material of a dark green colour, as a relief to the eyes; while the outside colour of the hat should be white, drab, or light grey.

(VIII.) The ordinary band of leather to fit round the forehead, with which most hats are supplied, becomes, when the wearer is exposed to extreme heat, saturated with moisture. This leather hardens, more or less, on drying, and besides being exceedingly uncomfortable to wear, in course of time, perishes and breaks into fragments. The substitution of a double fold of fine flannel for the leather band, will be found to afford much comfort; it is fairly durable, and has the advantage of being readily replaced.

(IX.) After sundown, a man is glad to dispense with his *solar topee*, and should be provided with a comfortable, machine-stitched hat or cap, made of some soft compressible material

such as cloth, or tweed, so as to pack easily in a portmanteau, or between rug-straps. A stiff felt hat is troublesome while travelling, or on the march, as constituting in itself an extra package—unless it be crammed into your canvas kit-bag with spare boots and other “odds and ends,” and experience teaches you, that none but a *very stiff* felt hat will long retain its shape under such treatment.

BODY CLOTHING.—When we consider, that a man's health and comfort are so materially dependent upon the manner in which his body may be clothed, under the varying circumstances of climate, and the peculiar nature of his occupation, the selection of proper material, and the adoption of such patterns of dress as practical experience may have shown to be most generally fitting and serviceable, becomes a question of paramount importance. In choosing an everyday working costume for out-door wear in the tropics, the essential points to be considered are:

First, as regards material:—

1. That it should be as light in texture as is compatible with durability.

2. That it should be of sufficient strength to withstand the roughest treatment.

3. That the colour should be a *fast* colour, calculated to stand frequent washing, and selected with a view, not only to concealing, as far as possible, the discolourations produced by daily toil, but with due deference to the recognised rule, that *light*, not *dark* colours, are most fitted for tropical wear.

Secondly, with reference to pattern:—

1. That the garments shall be shaped so as to afford perfect freedom of action to body and limbs, in either riding or walking.

2. That the material employed shall afford sufficient protection, without taxing the wearer's strength by unnecessary complications of folds and pleats.

Outer garments made of either flax, khakee, or drill, are most suitable; and light brown is the most serviceable colour to select.

JACKET.—The “Norfolk Jacket,” made with or without stand-up collar, is the pattern most universally adopted by old campaigners; and there is no better material for it than brown

khakee. This pattern provides a double fold of material, or, better still, a strip of stout padding down the back, for the protection of the spine, and has a pad on each shoulder for carrying gun or rifle, and several outside pockets, with or without flaps to fasten with a button. If made with a stand-up collar, the collar should be sufficiently easy to admit of a single fold of silk handkerchief being worn beneath, to prevent chafing. If made with a turn-down collar, a white silk handkerchief, several times folded, should be worn, loosely tied, for the protection of the back of the neck. To prevent the unsightly stains caused by excessive perspiration, a piece of oiled silk may be worked in under each arm-hole ; and we have also found, that leaving some three inches of the arm-hole-seam, under the arm-pit, unstitched, by affording ventilation and freedom, added considerably to our comfort. The length of the jacket should be adjusted so as barely to reach the saddle when mounted. Any tightness of the collar-band must be carefully avoided, and due allowance be made for shrinking, from repeated washings.

PANTALOONS AND TROUSERS.—Nether garments should be of the same material as the jacket ; but the pattern to select, whether trousers, pantaloons, or breeches, will depend on the style of boot proposed to be worn. Discarding breeches altogether, we would recommend one pair of khakee pantaloons, and one pair of khakee trousers to be taken. The pantaloons, to be worn with either the “field-boot,” or the ordinary shooting-boot and gaiter ; and the trousers, for wear when the gaiter is not required. Pantaloons may be kept in position by either waist-belt or braces. The waist-belt is apt to allow the shirt to ruck up at the waist, while the braces, in riding, act as a certain restraint upon the free action of arms and shoulders. Our own experience leads us to prefer a belt to wear with pantaloons, and braces with trousers. Both pantaloons and trousers should have a small pocket in the waistband, lined with chamois leather over oiled silk, for a watch ; and the trousers should be provided with roomy side-pockets. The pantaloons should fit easily in the seat, and over the

knee, but fairly tight to the leg between the knee and ankle. If the wearer contemplates much work in the saddle, he should have the pantaloons made of double cloth in the seat and inner side of the leg to below the knee.

BRACES AND BELT.—All elastic substances soon loose their elasticity in hot climates, and elastic braces and belts in particular, from being continually saturated with perspiration, generally become stretched and unserviceable. The material we would recommend for a belt is brown leather, and braces should be made of silk or cotton web.

SHIRTS.—Kashmir is the best material for shirts. It is a mixture of silk and wool, is very light in texture, perfectly absorbent, and combines all the properties of flannel, without the weight and thickness. The neck-bands should fit easily, and be made of silk or cotton gauze; the latter is preferable. In making up, a certain allowance should be made for shrinking, as, even with advertised “all shrunken” materials, it is surprising how the wristbands of

one's shirts work up the arm after repeated washing. No buttons should be affixed to shirts. Holes for studs and sleeve-links, should have a silk or cotton gauze backing, or they soon become distended, and the studs fall out. There should be a hole in the back of the neck-band for a collar-stud.

STUDS AND SLEEVE-LINKS.—White bone, or mother-of-pearl, will be found the best material for these, as there is not the temptation for natives to steal them, as is the case with more valuable materials. The studs should be of a good useful size, and cut out of the solid; while the sleeve-links should be strong enough to stand a good strain. It is well to be provided with an extra set of sleeve-links, and an odd lot of collar, and other studs, in case of accidents. Bone, or mother-of-pearl studs, with metal backings, are objectionable on two grounds—the metal, coming in contact with the skin, often produces troublesome sores, or it sometimes becomes disconnected from the material with which it is faced, and cannot be mended.

VEST.—An Indian gauze vest, with short sleeves to elbow, should be worn beneath the shirt. These do not take up much room in a portmanteau, and a liberal supply should be provided, as a frequent change is necessary to ensure comfort.

DRAWERS.—Elastic cotton will be found the most comfortable and serviceable material for drawers. They can be obtained with double seats, and are made to reach to thigh, knee, or ankle. Double-seated, and full length to ankle, will be found most comfortable. A lining of flannel to the waistband of the drawers, will answer all the purposes of an anti-cholera belt, and be found much more comfortable to wear during the daytime.

ANTI-CHOLERA BELT.—It is most essential, for the preservation of health, that a double fold of flannel, made in the form of a broad belt, to button at the back, should be worn round the abdomen night and day. When the waistband of the drawers is lined with flannel, this belt will only be required for night wear. They can be obtained, ready-made, of all out-

fitters, and two or three should be included in a kit.

KUMMERBUND.—A broad fold of cloth, wound some five or six times tightly round the waist, is a common article of dress amongst the natives of Eastern countries. Besides helping to protect the lower portion of the spine from the sun's rays, a kummerbund is found to afford considerable support to the back and loins, when travelling, either on foot, or in the saddle. Kummerbunds of silk, cotton, or a mixture of both these materials, are, usually, made in lengths of from ten to fifteen feet, by from twelve to eighteen inches broad. To adjust it, first take off your coat, then, folding the kummerbund to half its breadth, give one end to a companion to hold firmly, while stretched *taut* to its full length; place your end over the trowser band, between the last rib and hip bone, and keep turning your body, round and round, until the full length is wound tightly round the waist, finally, tucking in the end neatly and carefully, or it will soon work loose. We invariably wear a kummerbund when travel-

ling long distances, especially on horseback, and have derived the greatest comfort from the support thus given.

Socks.—There are probably few articles of clothing about which there exists greater divergence of opinion, even amongst known pedestrians. It would seem reasonable to suppose, that the stout knitted hose, worn in the highlands of Scotland, was scarcely suitable for wear in the Australian bush, yet, there are many men, who will stoutly maintain, that a thick knitted woollen sock, is the only one to ensure comfort in walking and immunity from blistered feet, even in the hottest countries; while others, again, think nothing but silk or cotton, fit for wear in the tropics. Our personal experience, based on many a long weary tramp over parched ground and hot sand in Egypt, India, and elsewhere, prompts us to suggest fine woollen socks as the most comfortable for hard wear, and fine merino for ordinary wear on service. If a man would avoid all the miserable discomforts attendant upon tender and blistered feet, he should pay just as much

attention to the selection of a properly fitting sock, as he bestows on his boots; and, not contenting himself with having the sock carelessly measured around his clenched fist, should try it on his foot, bearing in mind, that all descriptions of socks, even those of the best material, stretch, and become comparatively loose, after they have been worn a short time. Fancy-coloured socks should be avoided, as the dye comes off on to the foot. A man going on service should not stint himself in the quantity of socks he takes with him; and, both as regards comfort and durability, it is true economy to procure them of the very best material and make.

Take one or two pairs of silk socks with you to wear, under the ordinary sock, when your feet are tender and inflamed.

SLEEPING SUITS.—Two sets, “wash and wear,” will be sufficient when going on temporary service. The suit consists of a loose jacket, reaching to about the middle of the thigh, and “pyjamas,” or very loose trousers. Kashmir is the best material to make them of,

being much lighter in weight than flannel, and more comfortable to wear next the skin. Silk cords should be used for fastening the "pyjamas" at the waist, as the Kashmir waist-band runs more freely on silk than on ordinary tape; besides, silk cord is not liable to get into knots. A pocket in the jacket is useful to hold a pocket-handkerchief.

NIGHT-CAP.—There is no need to include a night-cap in your kit. Should you require such an article, a very possible contingency in countries which generally swarm with mosquitoes, gnats, &c., an excellent and comfortable substitute can be made as follows:—Spread out a large square silk handkerchief, take hold of the two corners furthest from you, and turn or fold under some five or six inches. With the handkerchief in this position, take the right and left corners of the fold thus formed, and bring them, downwards, forwards, and inwards, until they meet in the middle. The handkerchief now somewhat resembles a cocked hat. Now take the right and left-hand corners that are nearest you, and roll tightly in an up-

ward direction, until the lower border of the fold that was originally turned under is reached. Raise the handkerchief without letting go your hold, and, drawing the cap thus formed over the head, tie the ends under the chin. This operation, which has taken so many lines to describe, may be done in less than half a minute.

POCKET-HANDKERCHIEFS.—These should be of silk, and of medium size. In use, silk is not so irritating to a tender skin as either cotton or cambric, and is less bulky in the pocket; and pocket-space, being valuable, should be economised. Three or four square, full-sized white silk handkerchiefs should also be taken. There is nothing more comfortable and suitable for wear round the neck, and, in the event of any accident to hand or arm, they are most useful as a sling.

BOOTS.—The value of a well-fitting, comfortable, serviceable boot, that, by giving unobstructed play to the muscles and bones of the foot, and allowing free circulation of blood, renders walking a pleasure, is most

thoroughly appreciated even by the pedestrian who, at home, has within his reach every means of availing himself of the boot-maker's skill; the additional importance, therefore, of providing oneself with a suitable and complete outfit in this particular, before proceeding to regions where you will be thrown on your own resources, or, at best dependent on the crude efforts of the native "chuckler," cannot be too strongly insisted upon; and we would invite our readers' most serious attention to the remarks we have to offer on this most important subject.

It not unfrequently happens to the man on service, that issues of the most vital importance, on occasion, even his own life, are dependent, for the time, upon his walking powers; in such emergency, a good boot is his best friend. The best description of boot for service wear, has been a matter of endless discussion, and the gravity of the question, as regards the soldier's marching powers, fully recognised; and it is needless to observe, that that which affects the soldier, is equally applicable to the

ordinary traveller. The "Ammunition Boot" has been fixed on, by the military authorities, as most generally serviceable for the Infantry; and, having ourselves severely tested this boot in both wet and dry climates, we can testify to its undeniable adaptability, for general use. But "Ammunition Boots" are not always to be procured; we, therefore, proceed to note down the points to be observed, if you would procure a boot affording ease and comfort in walking.

(I.) The sole should be generously broad and sufficiently thick, without being too heavy, and should protrude all round beyond the upper.

(II.) The boot should be square at the toe, so as to allow the toes full play in walking. A boot with a pointed toe, is a fashionable abomination, that by cramping the foot into an unnatural position, ends by, more or less, crippling the tortured wearer. If a square-toed boot be objected to, on the score of its unsightly appearance, the shape can be modified by slightly rounding, but such rounding should

be made almost wholly on the outer edge of the sole, in accordance with the natural outline of the foot.

(III.) When the boots are placed side by side, the inner edges of the soles should touch nearly the whole of the length, from the ball of the foot, to the end of the great toe.

(IV.) The heel should be deep, broad, flat, and not too high.

(V.) Both soles and uppers should be made of thoroughly seasoned leather of the best description procurable. Ordinary shooting-boots, made for wear at home, are not generally suitable for wear in the tropics, especially in very dry countries, although if made not too heavy, they would do for use in Burmah, where much wet prevails. For general use, on foot or horseback, we have no hesitation in recommending Dean's celebrated "Field Boot." This boot reaches to just below the knee, like the "Butcher Boot," but has the special advantage of being laced over the instep, so that, in addition to being a comfortable riding-boot, the heel does not chafe in walking, as is the case

with the ordinary riding-boot. Made in russet leather for hot, dry countries, and in porpoise leather for wet, we know of no fitter boot to wear with pantaloons, in saddle or on foot. A pair of ankle lace boots, of russet or porpoise leather, according to the country to be visited, should be taken to wear with trousers, or with pantaloons and leggings. You should never, if possible, be without a spare pair of boots. A pair of soft leather slippers, three or four extra pairs of porpoise-hide laces, and a tin of porpoise-oil, for dressing "Field Boots" (if made of porpoise leather), will complete this portion of the outfit.

LEGGINGS—are most comfortable to wear with pantaloons and ankle-boots. They can be made of canvas, or even lighter material. For wear with a khakee suit, we would recommend leggings made of the same material, and lined with thin brown leather. Buttons are always a source of trouble and annoyance; the leggings should fasten up the outer side of the leg, by leather loops, passed through eyelet-holes, and looping the one with another, the last loop at

the top being secured by a small strap passed through it and fastened.

“THE PUTTEE,” OR LEG-BANDAGE. — For riding or walking, as a substitute for gaiters, the “puttee,” or bandage, worn, almost universally, by the Kashmiris, and adjoining tribes, is now much used by Europeans. It is made of a soft kind of cloth, known in India, as “puttoo,” cut into a strip about four inches wide, and from six to seven feet long ; one end of the strip is folded, V shaped, so as to form an apex, to which is stitched about three feet of strong tape. To fasten the same round the leg, the bandage is first rolled up, with the tape in the centre, a couple of turns are then wound over the top part of the ankle-boot, and it is twisted (with whatever degree of tightness the wearer may wish) spirally, up the leg to just below the knee. The tape is then wound, spirally, over all, and fastened off, by turning the end in under one of the folds.

This bandage can be worn over ordinary trousers, but is much more comfortable if worn over pantaloons, or riding breeches. It is quickly and easily adjusted, and there is no trouble in using a

button-hook, or in lacing, as with the ordinary gaiter. Surgeon C. P. Turner, A.M.D., who used the "puttee" throughout the Afghan and Egyptian campaigns, writes as follows:—"The 'puttee' is one of the most comfortable leg coverings I know of."

WATERPROOF COAT AND LEGGINGS COMBINED.—During certain seasons of the year, the rainfall in the tropics is very heavy, necessitating the use of waterproof overcoats, &c. Waterproof clothing is especially irksome to wear in a hot country, and it becomes a question of some importance, to obtain it of as light a texture as is consistent with its being able to stand fair wear and tear. The ordinary long mackintosh coat, so useful when on foot, is, by its shape, most unsuitable when mounted. Messrs. Thresher and Glenny, the well-known outfitters, have shown us a set of "India waterproof hunting coat and leggings combined," which, from lightness and make (the waterproof being faced and backed with a light, but strong cotton material), is in every way suitable. The coat is cut short, to wear

in the saddle; and the leggings adjusted to protect the thighs and legs whilst riding. The rubber being faced and backed with a cotton fabric, there is no fear of its sticking together when exposed to a hot sun.

LOUNGE SUIT.—Except under very occasional circumstances, some relaxation from daily toil is to be looked for after sun-down, even on the roughest description of duty, when it becomes a luxury to doff one's working dress, and don a lounge suit. Blue serge is the best material for such a suit, and a few false collars and a black necktie, to wear with the same, will not take up much room in a portmanteau, or add perceptibly to its weight.

In concluding these remarks on clothing, we may add, that, even under the conditions of temporary out-door duty of an active nature, to meet the requirements of which, the above suggestions have been offered, occasions may yet arise, when a man may be much inconvenienced by the want of a dress suit. We can, indeed, call to mind more than one occasion when we have been placed in such a dilemma. The

probability of such a contingency arising should be duly considered. A dress-suit made of light diagonal, with shirt, collar, tie, &c., can be packed within a small space.

When on duty abroad, we have, frequently, found it necessary to replace some article of clothing, to have sent home for which, would have involved a great loss of time, so, an order has been forwarded to the nearest town (often some hundreds of miles distant) containing a European store. We have, in forwarding such orders, fully recognised the value of being able to state, in *trade parlance*, the exact size of the article required. For example—on ordering a hat, were you to simply send a piece of string, as the size of your head, a native assistant in a shop, would be quite capable of mistaking such piece of string as intended for the outside measurement of the head, and forward you, accordingly, an article intended for a child of tender years; whereas, if you give the size of the hat as, say $6\frac{7}{8}$, our native friend would be less liable to make such a mistake.

You will find it a good plan, to note down, on

a leaf in your pocket-book, before leaving home, not only exact measurements obtained from your tailor and hosier, but the *trade* sizes of your boots, socks, collars, hat, and gloves.

EQUIPMENT.

The advantage of travelling with as few *impedimenta* as possible, is at no time more practically illustrated, than when a man is thrown upon his own resources to find carriage for his luggage. Under special circumstances—on active military duty for instance—such luggage is limited to a certain fixed weight, when, of course, it becomes a question of excluding everything but absolute necessities; but, as a general rule, no one should hamper himself with more than, “at a pinch,” he could carry without assistance. As regards equipment, the term “necessaries” will be variously interpreted; many items, considered necessary by the inexperienced traveller, would be deemed superfluous by the “old stager,” and *vice versâ*. Experience in “roughing it,” alone teaches a man how to provide for his personal requirements

under such conditions ; and, on service even, it is curious to note the difference of opinion that exists on this subject. Colonel A., for instance, will carry his kit in his pocket ; while Lieutenant B., “ just joined,” will place the most generous interpretation upon the luggage limitation weight published for his guidance in G. O. On reaching the scene of labour, one soon finds out any items of kit that may be superfluous, and they can be easily dispensed with, but it is not so easy a matter to provide yourself with any article that may be found deficient ; so, in getting together your “ traps,” should any doubt arise as to the necessity of taking any special item, it is as well to be on the safe side, and find a corner for it. We never yet found an article of equipment that, not wanting ourselves, someone else was not glad to take.

PORTMANTEAU.—The size should be such that, when fully packed, it can be conveniently carried in one hand. Only the lightest make of solid leather portmanteau should be selected ; but the quality of the leather, details of work-

manship, fitness of lock, and strength and proper adjustment of outer straps, are matters that require the most careful inspection. The handle of the portmanteau should be strong and well fastened on ; it should also be broad, and afford a good grasp, or it will be found to cut the hand if the bag be heavily packed. There should, also, be a loose spare broad strap attached, for fastening to the kit-bag ; so that both packages can, if necessary, be strung over the shoulder, or across a pack-animal for convenience in carrying. You should, also, be provided with a spare key for the portmanteau. Brown leather is generally better than black. Have your name painted legibly on the top, and initials in large letters at both ends. It should be provided with an inside pocket, sufficiently large to contain foolscap paper, blotting-pad, official envelopes, &c. ; and a narrow compartment at the end, with a lid working on a hinge, will be found particularly useful for containing simple dressing requisites, and odds and ends that are liable to be mislaid if packed in the body of the portmanteau.

KIT-BAG.—This should be made of stout canvas, well waterproofed, and double-sewn all over. Shaped like a bolster-cover, it should measure about 40 inches in depth, and 14 inches in diameter. It should fasten with a stout double cord, and be provided with a strap and padlock, to securely close the neck when packed. Your name should be legibly painted thereon, and initials on the end in large letters. In this bag (excepting your waterproof ground sheet and blanket, which will go in the rug-straps) should be packed spare boots, and all articles of equipment for which you may not have room in your portmanteau.

VULCANISED RUBBER WATER-BOTTLE.—Covered with felt, these bottles are conveniently shaped to fit against the side of the body, when slung over the shoulder by a strap, with which they are provided. They are made in sizes, to contain respectively 1, $1\frac{1}{2}$, and 2 pints of water. The smallest size, empty, weighs 12 oz. with strap complete. They were largely used in the Ashantee and Zulu campaigns, and the pattern

was approved of by the highest military authorities.

POCKET FILTER (ATKINS' PATENT).—These pocket filters proved a great boon to the troops during the Abyssinian expedition, as, by their means, the men were often able to quench their thirst with water obtained from muddy pools, that would, without such handy and efficient means of filtration, have been undrinkable. No travellers in the East should be without one of these filters. A ball of carbon, into which an India-rubber suction tube with bone mouth-piece is fitted, it is contained in a small tin box that can be comfortably carried in the pocket or wallet. Be careful to provide yourself with a spare India-rubber suction tube.

INDIA-RUBBER BASIN.—These are circular in shape, some 14 inches in diameter, and made to fold flat for convenience in packing. When required for use, the sides are kept in position by ash uprights, which pack in the bottom of the basin.

INDIA-RUBBER BUCKET, with India-rubber

handle, and 10 inches in diameter ; made to fold like the basin just described.

TENT-POLE STRAP.—One of the many inconveniences to be looked for in tent-life, is the want of pegs on which to hang clothes. The “Tent-pole Strap” is ingeniously contrived to supply this want. It consists of a short strap fitted with four strong brass hooks. When this strap is fastened round the tent-pole, the hooks stand out all round the pole, and are most useful to hang clothes on. This strap is strong, portable, and light in weight, weighing only six ounces.

WATERPROOF GROUND-SHEET, FITTED EYELETS.—When you have to make up your bed on damp or wet ground, as not infrequently happens when on service abroad, the protection afforded by a waterproof ground-sheet can be easily understood. As a provision against rheumatism, it is invaluable ; and, fastened over the top of a country cart, when travelling, it keeps out the heaviest rain.

SCARLET BLANKET.—This colour will be found more serviceable than white. The blanket

should be sufficiently large to fold double, if necessary. On cold nights, or in case of sickness, good and sufficient covering will be fully appreciated.

AIR-PILLOW.—One made of India-rubber, to be inflated at will, adds to comfort, and occupies but small space when rolled up.

BATH-TOWELS AND SPONGE.—These should be of good size.

DUBBIN will be required for your boots in wet weather. Six small tins will pack conveniently in a large tin box.

CASE, WITH KNIFE, FORK, AND SPOON, made of leather. The knife, fork, and spoon are each made with a hinge to fold up; a convenient form of carrying these necessary articles. A small metal box is included in case, to contain salt and pepper.

HOUSEWIFE, fitted with scissors, needles (including a couple of packing needles), thread, &c. ; should contain also a punch for stamping holes in leather, a small file, a lancet, and a piece of cobbler's wax.

SOAP.—Several cakes of "Terebine" soap and a bar of carbolic soap.

DISINFECTANT, *see* page 111.

COOPER'S EFFERVESCENT THIRST LOZENGES, *see* page 124.

LANTERN AND CANDLES.—If it is intended to pack the lantern in the kit-bag, it should be of moderately small size, and fit into a tin case for the protection of the glass. It must be fitted to burn either oil or candles, and a good supply of candles and lamp-wicks should be taken. For our own part, we have found a *hurricane lantern*, fitted to burn a duplex wick, fully repay us for the trouble of carrying as an extra package. In countries where there is, comparatively, no twilight, the comfort of being supplied with a good light, can only be truly estimated, by those who have had to perform heavy office work under the flickering light of a farthing rushlight or its equivalent. Any description of lantern that may be taken, should be fully protected at the sides and top with wire gauze, or the wick will soon get clogged by the myriads of insects it will attract.

TIN-OPENERS.—Two should be taken, one for

opening circular, and one for opening square tins.

POCKET-KNIFE should be stout and serviceable, and provided with corkscrew, and a stone-extractor for removing stones from a horse's hoof.

PADLOCK.—One or two of the “Yale” padlocks, as supplied by Messrs. Thos. McKenzie & Sons, of 16 Holborn Viaduct, will be found most useful. They are very strong, and their construction is such, that it would puzzle a native to “pick” them.

A FLASK WITH METAL COVER FOR CUP, A PEWTER to hold a pint, with metal lid on hinge, SEVERAL NOTE-BOOKS fitted with pencils, A LARGE BALL OF TWINE, FLINT, STEEL, AND TINDER-BOX. This last is not absolutely necessary, as matches are now obtainable over the whole globe, but it would be useful if the matches got wet.

WATCH.—A good serviceable watch in hunting case; and have it carefully inspected by a watchmaker before you start.

LOOKING-GLASS.—You will find a very small one answer all needful purposes.

GUIDE-BOOK AND MAP.—A small guide-book, with a good map of the country to be visited, should be taken. Messrs. Henry S. King & Co., the well-known agents and bankers, have lately compiled two small handbooks containing, in a compressed form, a mass of useful information, that will be of the utmost value to outward or homeward-bound travellers to and from India and the East. These little books can be obtained gratis, on application at their offices, 65, Cornhill, and 45, Pall Mall, London; and we would strongly recommend those going abroad to avail themselves of Messrs. Henry S. King & Co.'s liberality.

UMBRELLA.—A large white umbrella lined with dark green. The stick should be stout and strong, without being too heavy, and the handle large enough to afford a comfortable grasp. Messrs. Sangster & Co., of Regent Street, have shown us an excellent umbrella of this description.

GOGGLES.—“Calhins’ patent,” *vide* pp. 23, 24.

POCKET-COMPASS.—A good pocket - compass will be found most useful.

MOSQUITO CURTAINS.—An indispensable article of equipment in nearly all tropical climates. They should be made of best green net, bound at the edges with strong binding tape. Dimensions of top piece about six feet long by three feet wide, and sides to hang down about four feet and a half.

REVOLVER.—We can confidently recommend *Adam's Patent Double - action Central - fire, Breech-loading Revolver, 4.50-inch bore*. This weapon is exclusively adopted by Her Majesty's War Department, which is sufficient guarantee for its excellence in every respect. This revolver has six chambers, and can be cocked for deliberate aim, or discharged in rapid succession by merely pulling the trigger. It is made in two sizes, the larger size with a six-inch barrel, and the smaller with a four-and-half-inch barrel, and three quarters of an inch shorter in the butt.

Up to fifty yards, as good results can be obtained with the shorter barrel as with

the larger one, but at longer ranges, greater accuracy could be obtained with the six-inch barrel. The difference in weight is only three ounces, the two sizes weighing, respectively, 2 lbs. 6 ozs., and 2 lbs. 3 ozs. A special cartridge has been designed for this weapon by Colonel Boxer, R.A.

With the revolver should be taken—

A Waist-belt,	} made of brown
Holster,	
Pouch for cartridges,	
	} leather, and
	} weighing $1\frac{1}{2}$ lbs.

A tin-cased pouch holds twenty-four, and a flat pouch forty-eight cartridges.

A SHOULDER-BELT, for carrying the revolver when mounted, will be found convenient. This belt should have a waist attachment, to prevent the revolver jerking up and down when riding fast.

SADDLERY.—In selecting this most important part of your equipment, you should bear in mind, that horses in the east are, generally, of a lighter build than those you are accustomed to see at home, and that, accordingly, medium-sized equipments are likely to prove most suit-

able. Go to a saddler who has an Indian or colonial business connection (there are many in London, such as Peat, Whippy, and other well-known firms), and be fitted for a saddle, with as much care as you would be measured for a boot; your future comfort is likely to be as equally dependent upon the one, as upon the other. The saddle should be fitted to carry roomy saddle-bags, and provided with a carefully adjusted *numdah*, or piece of felt for the protection of the horse's back beneath the saddle. An unnecessarily large *numdah* is both unsightly and cumbersome. Girths made of plaited hide are the best. They are cooler in use, stronger, and less liable to gall the horse than the ordinary girth. A spare pair of stirrup leathers should be provided. Clothing should be made of warm, but not too heavy material. Bridle, light and strong. "Fancy" bits, "punishing" curbs, &c. should be rejected. Stable-gear should be limited to the barest necessities, made of the lightest description of serviceable material. A few general remarks as to the *treatment of your*

horse in tropical countries, may not be out of place here.

FEEDING.—When a horse is in work, green food should be given in limited quantities only, and care should be taken not to give wet grass. The daily forage should be divided into three feeds, given in the morning, before work, mid-day, when resting; and evening, after work. Hard food, like chenna, gram, and beans, should be either crushed, or soaked in water for a few hours. Horses in Egypt, keep in splendid working condition on chopped straw, in addition to their feed of beans; and, during our tour of duty in that country in 1868, we were surprised at the pack-horses preferring this most uninviting-looking-food, to the deliciously-scented compressed forage which was sent out from home in bales, but which, in most cases, they refused to touch.

WATERING.—If your horse have a hard day's work before him, give water but sparingly before starting; let him have a few mouthfuls, at intervals, during the day, but reserve his "big drink" until after he is picketed down

for the night. When picketed out, or in the stable, on non-working days, your horse should always have free access to a bucket of water; if left within his reach, he will not over-drink himself, unless he be too hot, when he must be allowed to get cool before the water is given.

GROOMING. — After a hard day's riding, the girths should be loosened, and the horse walked to and fro, so as to gradually cool down before the saddle is removed. After a good rub down with a whisp of straw, the feet should be washed and examined, and the hand passed over the back to see if there be any tenderness caused by the rubbing of the saddle. Should any tenderness be observable, special precautions should be taken to avoid a saddle-gall, and the portion of the saddle that has pressed on the back carefully examined, with a view to preventing its further pressing on the affected part.

Your personal attention should be given to your horse's shoeing, and, on a long journey, you should be provided with a spare set of

shoes and nails. Salt-and-water, is a simple and efficacious treatment for a saddle-gall. On hot, hard soil, a mixture of tar and grease should be rubbed into the hoof to prevent sand-crack.

Attend yourself to the feeding and grooming of your horse; no natives are to be thoroughly trusted in this matter. Learn the use of, and provide yourself with, a few simple horse medicines for the treatment of ordinary complaints. For horses in a low condition "Restorine," a preparation composed of the inner bark of the smaller branches of the red elm (*Ulmus Campestris*), specially prepared with suitable aromatics, is strongly recommended by E. T. Cheesman, Esq., Veterinary Surgeon, 1st Class Army Veterinary Department, in charge of 5th Dragoon Guards, and J. Tatam, Esq., Inspecting Veterinary Surgeon, Her Majesty's Forces (Retired List).

A pack-horse will carry about 200 lbs., inclusive of pack-saddle; and a mule and bullock, respectively, will carry about the same weight.

In concluding this chapter on clothing and

equipment, we would remark, that if our reader possess histrionic ability or musical talent, there is every chance, in the course of his wanderings in "furrin parts," of his being called upon to contribute his share to the amusement of his fellow-travellers, and his being able to do so, in however small a degree, will meet with a most cordial acknowledgment.

We have in our possession a tin-whistle that has travelled with us over a good portion of the globe, and whose dulcet tones have often served to "soothe the savage breast" or "trip the nimble toe"; whilst an old, tattered, two-character farce could tell strange stories of theatrical performances, got up in the most out-of-the-way places, and under inconceivable difficulties, but which have, nevertheless, served to pass the hour pleasantly. We never noticed that the weight of our portmanteau was sensibly increased by these trivial additions.

Finally, we would beg to tender our fullest acknowledgment for the many valuable hints we have obtained from the works of Sir Joseph

Fayrer, K.C.S.I., Dr. Bristow, Dr. Ringer, and Surgeon-Major Horton, A.M.D., in our compilation of the chapter on the diseases of tropical countries.

Our notice of these subjects has, necessarily, been very brief, and those of our readers who would seek further information are referred to the above works. We trust that these suggestions may afford practical assistance to those whom commercial enterprise, the good of their fellow men, or the service of the Queen may summon "on duty under a tropical sun."

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THE "TIMES," AUGUST 13TH, 1877.

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